DOCUMENT RESUME

ED 382 779 CE 068 833

TITLE	Apprenticeship: Which Way Forward?
INSTITUTION	Centre d'Etudes et de Recherches sur les Qualifications, Marseilles (France).; Organisation for Economic Cooperation and Development, Paris (France).
REPORT NO	ISBN-92-64-14294-0
PUB DATE	94
NOTE	157p.; For related documents, see CE 068 834-836.
AVAILABLE FROM	OECD Publications and Information Center, 2001 L Street, N.W., Suite 700, Washington, DC 20036-4910.
PUB TYPE	Collected Works - General (020) -- Collected Works - Conference Proceedings (021)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Apprenticeships; *Cooperative Education; Developed Nations; Educational Needs; *Educational Practices; *Educational Trends; *Education Work Relationship; Foreign Countries; Futures (of Society); Postsecondary Education; Secondary Education; Technical Education; Vocational Education; *Work Experience Programs
IDENTIFIERS	Belgium; *Europe; Finland; France; Germany; Netherlands; Spain

ABSTRACT

This volume presents the results of a seminar on apprenticeship in Europe entitled "Apprenticeship, Alternance and Dual Systems: Dead-Ends or Highways to the Future" (Marseilles, France, April 1994). It deals with ways in which alternating learning at school and work can provide young people with relevant work skills and facilitate their integration in the world of work, and it addresses how apprenticeship may contribute to relate practical theoretical learning. In addition, the publication examines historical features of apprenticeship and recent developments that stand in the way of enterprise-based training and that discourage young people from choosing this route. The first part of the volume contains the four papers discussed at the seminar and a synthesis of the debate. The second part presents a selection of national contributions to the seminar. The following papers are included in part I: "The Issues" (Durand-Drouhin, Romani); "The Difficult Rediscovery of 'Professionalism'" (Lutz); "Pedagogical Objectives and Organisation of Alternating Training" (Merle); and "Issues, Problems and Perspectives: Lessons from an International Debate" (Bertrand, Durand-Drouhin, Romani). The seven country studies included in part II are the following: "Belgium (the French Community): From the Socioeconomic Context to the Needs of School-based Training"; "Finland: Open Skills, Open Knowledge" (Volanen, Kyro); "France: Alternance in Initial Vocational Education and Training" (Pair); "Germany: Pedagogical Objectives and the Organization of Alternating Learning at School and at Work" (Koch); "Spain: Constructing an Institutional Framework for the Social Regulation of Alternànce" (Planas); "Switzerland: Apprenticeship--The Features of the Swiss Dual System" (Kubler et al.); and "The Netherlands: The Links between School and Firm-based Vocational and Technical Education: Highways to the Labour Market and Pathways to Higher Education" (van den Dool, Weijs). (KC)

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Publié en français sous le titre :
LES FORMATIONS EN ALTERNANCE :
quel avenir ?

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FOREWORD

In 1990, the OECD launched a programme on the changing role of vocational and technical education and training (VOTEC). The activity included: country reports examining recent developments in national VOTEC systems and their responsiveness to changing jobs and needs of young people;[1] a cross-national study of educational pathways and participation in VOTEC;[2] a study on the integration of practical and theoretical learning;[3] and a series of international meetings providing lively information exchange and debates and culminating in a high-level conference in November 1994: "Vocational and Technical Education and Training for the 21st Century – Opening Pathways and Strengthening Professionalism".[4]

Four policy seminars focused on the following themes of particular interest to OECD countries:

- linkages between various types and levels of general and vocational education and training;[5]
- implications of technological innovation for VOTEC;
- assessment, certification and recognition of skills and qualifications in VOTEC;[6] and
- advantages and pitfalls of modern forms of apprenticeship (this volume).

This volume presents the results of the last seminar, entitled "Apprenticeship, Alternance and Dual Systems: Dead-Ends or Highways to the Future". It deals with ways in which alternating learning at school and work ("alternance"in French) can provide young people with relevant work skills, and facilitate their integration in the world of work and – not least – how it may contribute to relate practical and theoretical learning. In addition, this publication examines historical features of apprenticeship and recent developments which stand in the way of enterprise-based training and which discourage young people from choosing this route.

"Alternance" takes very different forms across countries. These include traditional apprenticeship, the Germanic "dual system" variant, and vocational education in schools, with shorter or longer periods of practical work experience. They represent different approaches to partnership and co-operation between schools and enterprises (see *Schools and Business: A new partnership*, OECD, 1992) and they reflect the committment of industry and government to common investment in the future of young people. A widely shared conviction at the seminar was that such committment and the successful implementation of open pathways and careers in education and employment will decide whether alternating learning at school and at work will become a "highway to the future".

The seminar took place in April 1994 in Marseilles. It was organised jointly by the OECD and CEREQ (Centre d'Études et de Recherches sur les Qualifications), with the help of the Provence-Alpes-Côte d'Azur Region and the French Ministers for Education and for Labour, Employment and Vocational Training.

Part I of this volume contains the papers discussed at the seminar and a synthesis of the debate. Part II presents a selection of national contributions to the seminar.

The persons in charge of organising the seminar were Mrs. Claudine Romani for CEREQ and Mrs. Marianne Durand-Drouhin, responsible for the VOTEC activity within the OECD Secretariat.

This report is published on the responsibility of the Secretary-General of the OECD.

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Employment, Labour and
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NOTES

1. Reports on the German and Dutch VOTEC systems forthcoming in 1994.
2. Forthcoming in 1995.
3. Forthcoming in 1995.
4. Conference report forthcoming in 1995.
5. See *Vocational Education and Training for Youth: Towards Coherent Policy and Practice*, OECD, 1994.
6. *Assessment, Certification and Recognition of Skills and Qualifications in VOTEC*, forthcoming in 1995.

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Part I

SYNTHESIS OF THE DEBATES

1. THE ISSUES

by

by Marianne Durand-Drouhin (OECD) and Claudine Romani (CEREQ)

This text was intended to prepare participants for the Seminar. Following a historical review of VOTEC arrangements, it identifies four central issues for debate:

- linkages in alternating training and employment;
- mediation between general and vocational education and especially "alternance";
- the pedagogical objectives of alternance;
- the institutional framework and the role of different actors in the implementation of "alternance".

1. The historical and international context

OECD countries have widely differing traditions as regards initial vocational education and training. Until recently, only certain countries in continental Europe have kept and/or developed real "systems" of initial vocational education and training. These are either school-based systems (Nordic countries, France) or apprenticeship systems including compulsory schooling (German-speaking countries). In both cases, relations between training and employment are formalised through collective agreements. In Anglo-Saxon countries, apprenticeship of young people in companies has survived mainly in the building trade. In these countries, education policies during the 1960s and 1970s concentrated on developments in general and academic education, while large numbers of young people continued to enter the labour market without recognised qualifications.

Up to the early 1970s, innovative movements for greater access to post-compulsory education and the general upgrading of educational attainment emanated mainly from those countries that had developed comprehensive education at lower secondary level, access to post-compulsory general education (United States), and post-compulsory school-based vocational education (Nordic countries, France). The "modernisation" of apprenticeship systems in German-speaking countries, which began gradually during the 1960s, went initially unnoticed or was considered insufficient in the international arena. Because of the early and definitive orientation of children into "watertight" streams of either vocational training or general and academic education, these systems were thought excessively selective.

As of the late 1970s, the international community began to discover the virtues of the "dual systems" in Germany, Austria and Switzerland as a framework for transition and employment of young people. In other OECD countries, within a few years, the unemployment rate for young people had reached levels between 20 and 40 per cent. In contrast, countries having maintained apprenticeship in companies as the dominant mode of training for young people seemed little affected. While certain problems did appear at the "second threshold" of transition from apprenticeship to regular employment, these remained relatively small compared with the difficulties encountered in other countries.

Hence the "dual systems" of German-speaking countries, and particularly that of Germany, attracted the attention of other OECD countries. Decision makers and researchers discovered the successful mobilisation of employers to provide apprenticeship in response to the demographic tide of the 1970s and 1980s. They also learned about collective efforts to modernise the content and methods of training in enterprises and about the existence of certified further training within industry, whereby former apprentices have access to the careers of *Meister*, technicians and engineers.

At the same time, a series of comparative studies were undertaken in Europe concerning work organisation and efficiency within German, French, Italian and British companies. The results suggested causal relations between the greater competitiveness of German industrial companies, vocational training within the dual system, the organisation of careers and hierarchical structures, and finally, the relative employment security linked both to the importance of internal labour markets within large companies and the smooth running of occupational markets at branch level.

Within a few years (1975-1980), the education systems of German-speaking countries which had up to then been perceived to be archaic and socially unjust, suddenly found themselves taken as "models" as far as the vocational training of young people was concerned. Since then, numerous studies and visits by foreign delegations to these countries have confirmed and reinforced this positive image, at the risk of sometimes over-simplifying and glorifying a reality which is both complex and changing. Impressed by the coverage and quality of the dual system, foreign observers may not always have been in a position to fully appreciate the diversity of apprenticeship conditions and job prospects; to assess the role played by professional organisations in the dual system and to evaluate its costs and constraints; and finally, to understand the fundamental role of "training regulations" (*Ausbildungsregelungen*), based on considerable research and development, and the subject of laborious negotiations between the social partners, federal authorities and the educational authorities of the various *Länder*.

The dual system has long been perceived (both within these countries themselves and by foreign observers) as immutable – fixed in its perfection ("*bewährt*"). Today though, questions are being raised in Germany as in Austria and Switzerland. Young people, fewer in number since the early 1990s, no longer wish to enter certain types of industrial and craftsmanship apprenticeship. They prefer more attractive programmes in service or high-tech activities after which they tend to move on to post-secondary education, preferably at university level. German universities are overcrowded, with initial education periods getting longer, exceeding those of other countries. The traditional careers of skilled workers are in certain sectors threatened by the competition of graduates from "*Fachhochschulen*" and universities, themselves suffering from the competition between graduates. Looming on the horizon lies a spectre which periodically haunts Germany: the overabundant supply of graduates from higher education (*Akademikerschwemme*) and a concomitant shortage of skilled workers (*Facharbeitermangel*).

Largely stimulated by the development of dual systems, other European countries such as Denmark, France and the Netherlands began in the 1980s to experiment with school-based vocational training programmes, seeking to alternate periods of learning at school and in companies. Such experimentation is of interest because, first of all, it offers learning opportunities in a real work environment, in sectors where traditionally no such possibilities existed, or where they had not been adapted to present-day needs.

In addition, however, such efforts also permit more specific questions to be raised as to the pedagogical complementarity of theoretical and practical learning at school and in the workplace. They provide the opportunity to explore various forms of "alternance" at post-compulsory and post-secondary levels. One of the main objectives was to open up vocational training and upgrade its status by creating programmes which prepare the school leaver both for employment and higher education. In the form of "pre-apprenticeship" or other "pre-vocational" programmes, the pedagogical role of "alternance" during lower secondary education also continues to be explored.

In Anglo-Saxon countries, the development of initial vocational training took the form of school-based alternatives to academic education. This took place in the United States with Community Colleges (at post-secondary level); in Great Britain through the expansion of Further Education Colleges (at post-compulsory level) and the development of a comprehensive qualification system (NVQ, GNVQ); in Australia with the development of TAFE (Technical and Further Education) and through award restructuring which included the revision of both qualifications and collective agreements. In addition, these countries relied heavily on transition programmes and labour market measures for young people. Some of them, such as the "Youth Training" scheme in the United Kingdom, contributed to the gradual development of permanent structures and more formalised training programmes for young people.

At the same time, the Anglo-Saxon countries sought to develop "partnerships" between schools and companies. However, due to the marked decentralisation of education, the absence – or weakness – of collective organisation by employers and relatively low commitment of unions (except in Australia), these efforts remained more isolated and less "systemic" than those in continental Europe. Up to now, they have not led to a collectively organised participation of employers and unions in the development and provision of vocational education and training for young people.

In Japan, vocational training as such occupies today a relatively modest place within both secondary and higher education. Concrete occupational qualifications are most often obtained after the transition from education to employment. There is no comprehensive system of certification for vocational training. Occupational competences are assessed through commercial skill testing throughout working life. Initial vocational education is school-based. It includes neither apprenticeship in industry nor any other forms of "alternance". Relations between schools and companies are limited to tacit partnership agreements. Schools (or universities) signal students ready to be recruited in exchange for financial contributions by companies.

The school's "placement function" – officially recognised by the ministry of employment – dates from the early 1950s, when the transition of young people to employment was causing serious problems. Nowadays, approximately 85 to 90 per cent of young people leaving secondary education find a job straightaway. They are most often recruited during their final year of studies. However, very recent data suggests a possible shift in this trend. The unemployment rate for young people leaving the education system between the age of 15 and 20, which had stayed around the 2.5 to 3 per cent mark in recent years, rose to 5 per cent in 1992. This raises the question whether in coming years Japan may have to face difficulties of transition for young people and, if so, whether such difficulties might lead to changes in secondary education and in the relationship between education and employment.

2. Which future for "alternance"?

The evolution of "alternance" (learning in the work environment as part of formal education) will in the future be closely linked to its place within education systems. Currently its position varies widely from one country to another. In Germany, for example, the dual system does not merely represent sequences of learning in schools and enterprises. It provides a structure for the whole education system and organises the relationship between education (both general and vocational) and employment. In other OECD countries, the effect of "alternance" upon the education system as a whole is less pronounced. The question is whether different systems, stamped with their own peculiarities, will converge towards a single "model" (if so, which one?) or if current changes will result in a new diversity of education systems in the international arena.

Whatever the direction of these developments, all countries are faced with the same challenge: a severe crisis in the relationship between education and economic systems. Various signs of imbalance bear witness to flaws in the articulation of these systems: a gradual rise in youth unemployment, paradoxically associated with recruitment difficulties for companies; problems of transition, affecting even highly qualified young people; the doubt cast over the role of diplomas and certificates with regard to recruitment and access to employment; the fact that certification is not suited to actual company needs, and so forth.

In this context, the debate on apprenticeship and "alternance" in different countries takes quite different directions. In certain cases, such as Germany, the principles of "dual training" appear to be questioned by the crisis which affects relations between education and the economy. In other countries, on the contrary, co-operation between schools and enterprises is seen as the ultimate recourse in view of this structural crisis.

This raises a number of vital questions: how will each country conceive new linkages between education and the economy on the one hand, and between vocational training and general education on the other? What role will apprenticeship and "alternance" play in the development of new equilibria?

In more concrete terms, how will the transition of young people to employment be organised in the future? What career prospects will be proposed? Will apprenticeship and "alternance" lead to more effective and more motivating educational conditions for young people? Or, on the contrary, will the attractiveness of academic education call into question the very principle of alternating learning at school and at work? And finally, how will it be possible to control and share the costs of those types of apprenticeship and "alternance" which respond to the economic, social and cultural needs of today and tomorrow?

These questions call for reflection about the role of apprenticeship and "alternance" in the future. This publication examines how, and under which conditions, apprenticeship and "alternance" could contribute to the attainment of education and training objectives within OECD countries. Conversely, it will also consider whether and how the same objectives could be reached without recourse to "alternance". The discussion centred around the following four themes:

- Linkages between education and employment: what will be the role of apprenticeship and "alternance"?
- The mediation between general and vocational education and training.
- Pedagogical objectives and organisation of "alternance".
- The institutional framework and the role of different actors: new patterns of social regulation?

These themes are of course closely related to each other and cannot be discussed separately. Nevertheless, they provide a view from different perspectives of a number of complex issues related to apprenticeship and "alternance", and they facilitate understanding of their possibilities and limits under varying conditions.

3. Linkages between education and employment: what will be the role of apprenticeship and "alternance"?

Under this topic, debate focused on the following question: to what extent and under which conditions are combinations of learning at school and at work more successful than school-based education alone, in providing young people with the skills and knowledge they need in order to find employment and engage in satisfying careers?

By immersion in the work process, does "alternance" allow young people to acquire skills which cannot be produced by schools alone? Does it permit to produce skills which are more directly relevant to actual work requirements? Or on the contrary, does theoretical learning – the traditional prerogative of schools – better meet the requirements of abstract and complex reasoning linked to modern technologies and new patterns of work organisation? Is "dual training" in large companies not becoming more and more similar to technical education at school? Is this a sign of the inescapable convergence of teaching and learning in schools and companies?

It has been argued that apprenticeship within a company leads in many cases to excessive occupational specialisation. Does it therefore constitute an obstacle to polyvalence and individual mobility, the emergence of new qualifications and company flexibility? Could it be that "alternance" is better suited to certain occupations and sectors of activities than others? Is it easier to implement "alternance" between practical and theoretical learning in small enterprises rather than in big ones? Is there a tendency for apprenticeship and "alternance" to be organised in environments which are little inclined to innovation?

Such questions relate to the role of "alternance" both as a way of learning and as a means of articulating education and employment. The case of the German-speaking countries will allow examination of the latter aspect in particular. In these countries, collectively organised and regulated dual education and training is the basis of a unified, coherent training system covering all sectors of economic activity. Yet what effects does this system have – and will it have in the future – on the labour market?

The strong probability of finding employment at the end of apprenticeship has, up to now, facilitated to a large extent the transition of young people trained in the dual system. However, will rising unemployment and the competition of young graduates from higher education endanger the dual system's role as a framework for transition? In countries where there is no dual system, will the development of "alternance" guarantee the improved transition of large numbers of young people? Or will it simply enable enterprises to select the best students?

In German-speaking countries, dual training prepares young people for internal labour markets of large companies or branches. Through further training leading to recognised qualifications, companies and branches offer real career prospects. What will happen in the future? Have occupational labour markets not already been deeply shaken by massive economic restructuring, deregulation and the shorter life cycles of companies? Apart from agriculture and craft industries, is it still appropriate to speak of "occupations" *(Berufe)*? If the notion of "occupation" gradually disappears as an organising principle for training, will "alternance" not be reduced to its pedagogical dimension alone? What then would be the advantage – either collective or individual – for companies to take on the initial training of young people?

These questions underline the need for detailed analysis of the conditions of apprenticeship in various occupations, economic sectors and types of enterprises, as well as their impact upon the structure and functioning of labour and training markets. Do such specificities not exacerbate inequalities in training? Are they not at the origin of a segmentation of labour markets which perpetuates the disadvantages of those who follow initial vocational training within sectors in decline? In this case, what would be the advantage to young people of entering training pathways that confine them to areas of activity whose future is uncertain?

Finally, questions also need to be raised about the role of apprenticeship and "alternance" with regard to further education and training and its relationship with initial training. In dual systems, human capital investment by individuals and the financial outlay for training made by companies concentrate on initial training. In other countries (*e.g.* France), such efforts, which are less intense during the initial training period, continue throughout the employee's working life within the framework of more developed systems of further education and training. Does this suggest that dual systems may act as an obstacle to further education and training, so vital in the context of industrial restructuring? That they thus contribute to penalise the least qualified workers? Or conversely, can "alternance" facilitate a return to learning by adult workers, to the extent that it forms part of further education and training?

4. The mediation between general and vocational education and training

All OECD countries are seeking to remove the traditional barriers that exist between vocational and general education in order to reduce the negative effects of breaks in individual pathways and better adapt such pathways to the context of job diversity and instability. It is generally agreed that beyond compulsory schooling, young people today need "formal" training which includes elements from general education. Widely varying strategies are brought into play to lessen the gap between general education and vocational training and to upgrade the latter's status.

Whilst "alternance" has stood the test as a means of shielding young people disadvantaged by the education system from early exclusion, questions persist as far as its broader role in post-compulsory and post-secondary education is concerned. Does work-based learning not always lower the prestige of educational streams in which it is applied? Can it therefore possibly form part of a unified system, as the French are trying to develop through vocational *baccalauréats*?

Conversely, one might claim that "alternance" can be fully developed only as an alternative to general education, as a separate system preparing participants for distinct occupational careers, as is still the case in German-speaking countries. Should it not be protected against the competitive logic of general education? Does its integration into a unified system not run the risk of turning "alternance" into a new area of competition and selection?

Indeed, is it really possible to offer young people a "common core" within secondary education by which they can earn unlimited access to higher education, while preparing them at the same time for recognised occupational qualifications and successful transition into employment? In this case, would such "double" programmes not tend to become elitist streams? But then again, why aim for rapid transition into employment if the objective of these young people is actually to pursue further studies? Are young people lured with bright prospects of academic studies while their failure is programmed in advance? Or is it assumed that apprenticeship in a company will encourage young people to engage in continued learning and that it will make higher education more effective?

The trends observed in a good number of OECD countries indicate growing needs for so-called "intermediate" qualifications (such as technicians and supervisors). These qualifications are most often gained within education institutions. Would it be desirable to offer apprenticeship and "alternance" to young people at the post-secondary level? However, would that not simply mean putting off the segregation between "more worthy'' and ''less worthy'' educational streams to a different level? What can be inferred from the strategies of young people who, in Germany, obtain their '' *Abitur*'', go through the dual system and then pursue their studies in higher education? Despite their incontestable success in the labour market, are the duration and costs of such ''deluxe'' pathways not exorbitant?

However various countries have answered these questions, all the reforms and innovations (including those at post-secondary level) have come up against the inertia of traditional higher education (universities or ''*grandes écoles*''). Has the time not come to rethink the role and organisation of higher education in terms of ''further education and training'' which could be organised throughout working life – and at all levels of education and qualification – according to a logic of ''continuing alternance'' or of a ''continuing dual system''?

5. Pedagogical objectives and the organisation of ''alternance''

For decision makers ''alternance'' represents, above all, a policy instrument for regulating the education system. For teachers and trainers, on the other hand, it is mainly a means of pedagogical success. ''Alternance'' thus is a common tool which may be perceived to serve different objectives. Could it be that these objectives, instead of being complementary, may inspire inconsistent or even contradictory approaches? Is the effectiveness of the system therefore under threat? And how will it be possible to ensure coherence between pedagogical strategies and the operation of the system as a whole?

In order to attract and motivate young people, ''alternance'' must offer a convincing continuity between learning at school and at work. Such continuity neither exists naturally nor does it depend upon the student/apprentice. It must be founded on objectives and stages clearly defined by both the school and the enterprise. It must be built up and monitored by teachers and trainers together. What are the conditions required for such co-operation?

This question relates to the ways in which learning is organised: how is the supervisory function organised within a company and in partnership with the school? Which programmes are resulting from negotiations between the company and the school? What dialogue is being developed in order to define pedagogical approaches? Beyond the definition of contents and methods, how do trainers participate in the assessment and certification of competence gained at the workplace? What lessons may be learnt from the dual system so as to involve not only teachers, but also those responsible for training in companies in the certification process?

In a wider sense, what role could ''alternance'' play as a pedagogical method within future education systems? It has been argued that vocational training offers young people more functional goals (such as mastery of tools, processes and materials; product quality) whereas general education is seen to be based on principles of competition and hierarchy (emphasising status and power), which are exacerbated by mass education. Would the widespread practice of ''alternance'' contribute to a redefinition of the criteria of educational success? Would it permit to replace ''competition for its own sake'' as the driving force behind individuals' efforts by emulation motivated by the utility and quality of results, whether obtained individually or collectively?

The pedagogical effects of "alternance" on different age groups and at different levels of education remain to be clarified. These effects will depend both on the "intrinsic" pedagogical quality of each programme and the position of apprenticeship or "alternance" programmes in relation to other forms of vocational and general education. More particularly, at each level of education, pedagogical effectiveness will depend on subsequent pathways that "alternance" opens up to young people.

Finally, it has been suggested that alternating learning at school and at work could suit not only those with particular educational difficulties, but indeed the majority of young people. Experience with further education and training, as well as cognitive research, appear to support the hypothesis whereby most "novices" learn better – *i.e.* more effectively and with greater pleasure – in context and through concrete applications calling for inductive reasoning. The question therefore arises whether the entirely school-based education of young people through to the end of secondary education in most countries constitutes the "best solution", or just the simplest and/or cheapest.

6. The institutional framework and the role of different actors: new patterns of social regulation?

The preceding arguments suggest that school-based mass education could be interpreted as the – more or less satisfactory – result of a huge process of rationalisation. Could such rationalisation currently be reaching its limits? Might modern societies need to re-think enterprises and other institutions as places of learning not only for adults but also for young people? Is this "utopia"? Could such "utopia" contribute to mobilise traditional and new actors in the education and training field? Would it call for the redefinition of each actor's responsibilities towards young people? Require imagination in the search for new modes of organisation and co-operation within training systems? Necessitate the redistribution of costs and efforts between the various actors?

Several factors are currently driving towards such mobilisation: unemployment, which threatens the future of young people in particular; the asphyxiation of universities; the need for new skills and qualification profiles, requiring new forms of co-operation between schools and enterprises. All these challenges force the actors (public authorities, educational institutions, social partners, associations) to find new answers and develop common strategies to ensure the social regulation of education and training provision.

Each aspect of "alternance" thus becomes a potential case for negotiation. Amongst these challenges, what importance will be attributed to the redefinition of occupational profiles, the content of training programmes and procedures of certification? What efforts will be devoted to the production and diffusion of information on vocational training, allowing education systems to be planned flexibly and effectively? Depending on the context, how are such negotiations organised in different countries? And how are the conditions of societal mobilisation and negotiation currently evolving?

In both Nordic and German-speaking countries, there is a long tradition of dialogue and social consensus on vocational education and training. It is founded first of all in the functioning of employers' and union organisations, which allows common objectives to be elaborated and agreement to be reached on common rules. Negotiation between public and private actors can thus result in agreements recognised and accepted by all, despite the initial divergence in interests. The more marked and widespread the mobilisation of actors – including those in civil society – is upstream of the training processes, the greater will be their involvement in implementing "alternance".

Although this mode of negotiated regulation has proved its worth in the past, is it not currently suffering from a certain unwieldiness and rigidity? Will it be able to respond to the emergencies and requirements of an economy hit by crisis? Will it withstand the splintering of sectorial and professional identities and interests? Will it enable the pedagogical complementarity between schools and companies to be improved or rethought, taking it beyond the regulation of apprenticeship training in enterprises? Will it be able to take into account the hopes and aspirations of young people and the needs of social groups not represented by the social partners? What lessons may be learnt by other countries from this experience of negotiation and dialogue?

These issues are being raised in most countries within a context dominated by the decentralisation of educational and training systems and, more generally, of social regulation. Will such decentralisation help to overcome the crisis in relations between education and the economy? Will it lead to greater proximity between schools and enterprises, relying on a logic of local rather than national monitoring? Will such proximity facilitate a more precise identification of company needs, followed by improved responsiveness of education and training provision? Will it favour pedagogical complementarity between schools and enterprises? Will it help to fight youth unemployment more effectively?

The question also arises, whether the shift of social regulation from national to local level will result in a recomposition of the roles played by different actors, and whether their responsibilities with respect to training will be shared in different ways. Will new actors emerge or be confirmed in the field of apprenticeship and "alternance", such as local communities, company groupings, private training firms and non-profit-making associations? Will "alternance" therefore become the object of diverse and disconnected partnerships? Or, on the contrary, will it be the ground on which the energies and initiatives of those at the grass-root level converge with the policies and objectives of the collective actors?

Finally, what role will public authorities play at central, regional and local level? Will it be possible to achieve real co-ordination among decentralised public actors, who sometimes appear to act according to divergent rationales? Will public authorities thus be able to create the conditions for new forms of coherence and solidarity?

2. THE DIFFICULT REDISCOVERY OF "PROFESSIONALISM"

by

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1. The alleged end of professions in the post-war years

In the first few decades after the Second World War, most western world experts agreed that traditional trades, such as those of the baker, shoemaker, mechanic, electrician or bookkeeper, had come to an end. They identified the future of training and employment with a development pattern that can be summed up by two basic assumptions about changing demands for skills and changes in the skill structure of the labour force.

First, it was assumed that workers with traditional occupational qualifications would no longer be used (or, at best, used to a very limited if not negligible extent) in modern, highly industrialised economies. Instead, a a marked "polarisation" in demands for skills was expected.

On the one hand, a widespread devaluation of the traditional skills associated with operational tasks was foreseen. The underlying idea was that the mechanisation and automation of production, administration and service activities would progressively reduce the share of human activity in output. Both in production and in most modern service activities, the rationalisation of work processes and of corporate structures would lead to a situation in which any remaining work, at least with regard to operational tasks, would consist only of pre-planned and highly standardised partial operations. Accordingly, there no longer would be any need for traditional occupations (*Berufe*) whose "specific skills" (expertise) relate to holistic, complex activities that cannot be planned in detail.

At the same time, however, a growing need for conceptual, planning, supervisory and monitoring functions was identified, implying considerable demands in terms of technical knowledge and scientific thinking. Consequently, the second assumption was that modern economies would no longer need workers with practical training in an occupation that they can then practice throughout working life. Instead, modern economies were expected to require:

- a minority of highly qualified scientists and engineers;
- a majority of workers who can keep pace with the rapid change in employment structures and who can adapt smoothly to new demands for skills through further training and/or learning by doing in the work place.

According to the "message", which was delivered with force not least by the OECD, a consistent strategy in favour of modernisation and economic growth would therefore focus above all on the development of general education. This was expected to have a twofold effect: first, sufficient potential talent would be tapped to meet the rapidly expanding need for highly qualified labour; second, the majority of adolescents would acquire during a prolonged period of ten to twelve years at school the "general skills" (the "extrafunctional qualifications") which were regarded as a sufficient condition for lifelong mobility and flexibility. Changes in the social demand for education, as well as developments in education systems themselves and in employment structures have for a very long time reflected these expectations.

Admittedly the importance of "specific skills" (expertise) did not by any means decline so quickly as had been predicted. But the remaining need for such skills within the structures which had emerged according to the model was met quite easily. In this respect the extension and consolidation of internal labour markets played a key role. On the basis of solid general education, such internal markets guaranteed massive internal processes of qualification that were supported and rewarded by career advancement within the firm. Such qualification processes were often implicit (and therefore at no cost to the employer).

Since the end of the 1970s, however, there have been increasing signs that both the economic and the social potential of this model were on the wane in at least two ways. First, it has become evident that even a high level of general education and the availability of workers with good "general skills" is no lasting guarantee for economic performance and, more particularly, for competitiveness in the international arena. Second, rapidly rising youth unemployment as well as other problems have highlighted the limits to what schools can do to prepare youngsters for the labour market and for economic activity, at least if they continue to function according to the same logic as in recent decades.

2. The dual system as a "model" for an alternative approach to education, training and employment?

Before discussing in somewhat greater detail the causes and effects of these developments, a few critical remarks are necessary on the way in which the dual systems of vocational education and training in the German-speaking countries are presented and discussed in many of the other OECD countries. The more urgently education policy makers addressed the question of whether there was an alternative to the post-war development pattern in education and which form it could take, the greater became the interest in the training and employment systems of the German-speaking countries which differed greatly, and still differ, from the predominant pattern in other countries.

International comparative studies – first in German and French firms, and later also for example in German and UK firms – have in fact provided ample proof of the great value of occupationally structured and organised work, in particular with regard to practical, operational tasks. Quite obviously, there is a close relationship between the large number of very highly skilled workers and employees (*Facharbeiter*) in the German economy and its international competitiveness. This led observers to attribute just as much value to the dual system of vocational education and training. A central feature of this system is the close connection between firms and schools as places of learning and the linkage between practical and theoretical learning.

A serious warning must be voiced against adopting too quickly and too mechanically the German "model". It should not be assumed that undesirable developments in the last three to four decades, now regarded as mistakes, can be corrected by an "intelligent copy" of the system.

Such a warning seems to be necessary for at least three reasons:

- *First,* the German system is much less stable than foreign observers frequently believe. It would not make much sense to try today to adopt a system that, even in the countries in which it was developed, will be unable to survive in the longer term without radical reforms.
- *Second,* it would be much too simplistic to reduce the "German model" to a particular system of vocational training and to neglect the many institutional and social conditions on which its efficiency and functioning have depended up to now. These include, for example, the existence of strong trade unions, a labour market policy which at least so far has been quite efficient, a legal framework based on a broad consensus and, not least, a very distinctive system of training for technicians and engineers that – due to the crucial importance attached to career advancement – differs fundamentally from corresponding training and recruitment frameworks in most other industrialised countries. Two of these conditions will be subsequently discussed in more detail.
- *Third,* in referring to the German system as a "model" while overlooking the conditions allowing it to function, two questions that should be carefully separated are often lumped together. One question concerns the future of operational tasks in industry and in the most important service activities. In this respect, it should be underlined that it is the future of skilled production work which raises the most crucial problems for two reasons: first, because production work is particularly disregarded in all modern societies; second, because precisely the so-called service societies depend decisively on at least a small minority of workers who are able to produce and maintain ever more complex technical systems.

The other question relates to job and career opportunities for the minority of young people who – like in former times the majority of an age cohort – continue to leave school with no or only a very minor qualification and who are today particularly affected by unemployment.

3. The current rediscovery of "profession" and "professionalism" as part of an active strategy of competitiveness

The conditions and assumptions underlying the buoyant growth and modernisation in the post-war decades (the German "economic miracle", France's "*trente glorieuses*") and the prevailing patterns of development in education, training and employment have become increasingly questionable since the mid-1970s. Only a few key words need be mentioned in this connection:

Increasing market turbulence and new competitors are forcing the old industrialised countries to move gradually away from mass production to the flexible production of high-value goods. Accordingly (but also because the still very limited possibilities of replacing workers by computers are being assessed more realistically), the belief is losing ground that large areas of production and many routine processes in service activities can soon be fully automated. The very bureaucratic and hierarchical structures of most large firms are proving incapable of reacting quickly to the new challenges. This has two consequences for employment and training which can – slightly over-simplified – be stated as follows:

- new patterns of work organisation require workers with higher skills;
- new corporate structures and changing jobs require workers who can be mobile in the labour market.

The first statement calls for the following comments. Over a good ten years, the industrial and scientific worlds have come to realise that the old industrialised countries need to reorganise work processes, production patterns and company structures if they are to remain competitive. These post-taylorist forms of organisation can be more or less accurately described with concepts such as decentralisation, multiplication of profit centres, lean production and lean management, team work and "production islands". Their efficiency is mainly due to a drastic cut in the horizontal, hierarchical and functional division of labour, the reinforcement of which was considered inevitable in the first few decades after World War Two and which had been one of the basic premises of the above-mentioned development patterns in education, training and employment.

A common feature of all these modern forms of organisation is that they can function only if the majority, if not all workers, are able and willing:

- to carry out more difficult tasks competently and to a large extent autonomously;
- to react in the right way to unforeseeable problems;
- to take over real responsibility by themselves or with other team members for a particular – smaller or larger – work sector;
- and last but not least, to develop their own skills so that they can continually meet new or fundamentally changing demands.

These new skills are striking in their similarity – albeit at a considerably higher technological level – with the traditional profile of the practical, mainly "manual" trades.

We now come to the second statement, which requires somewhat more detailed comments. At first sight it would be natural to assume that the good old way of gradually acquiring skills in internal labour markets – backed up where needed by courses providing the necessary technical knowledge – should also be able to meet these new demands for more "professional" skills (occupational expertise). However, there are two very serious obstacles to such a strategy.

One is that the opportunity for acquiring skills in internal labour markets is itself declining as a direct result of the diffusion of new organisational concepts. With the elimination of the taylorist organisation of work, it will become very much more difficult and in time impossible for firms to productively employ workers with limited specific qualifications. And the fewer levels in the hierarchy there are, the less probable it will be that "mobility ladders" across many steps and levels will provide the possibility and the incentive for learning by doing.

Or, to put it very briefly: unlike traditional structures characterised by a marked division of labour, new patterns such as lean management, a loose hierarchy, team work, etc., presuppose that new employees will bring with them quite high qualifications which can very rapidly be put to practical use. Consequently, workers of this kind have to be available in the external labour market.

Secondly, there is a great deal to suggest that an economy which is trying to remain competitive while maintaining high salaries, and which exploits on a large scale the special flexibility of small firms and production units, needs a high degree of mobility on the inter-firm labour market. Such an economy has to cope with considerable ongoing changes in employment structures, which can no longer be managed – as in the European and particularly in the Japanese industrial sector in the last few decades – exclusively or predominantly on an enterprise-internal basis, through in-house mobility.

Both requirements – that employers can find skilled, immediately productive employees on the external labour market and that employees can change their jobs without having to fear a loss in their occupational status and income – can obviously be met only if a well-established system of "professionalism" (occupational expertise) exists in a country.

4. Necessary conditions for a well-functioning system of occupations and of vocational education and training

However clear the new conditions and needs may be, it is still of course very difficult to answer the main question with which this seminar is concerned, *i.e.* which sorts of workers and which kind of training are needed to meet these needs, and what must be done so that an economy will have at its disposal enough workers with appropriate qualifications.

The solution is quite evidently not simply to decree that there should be a return to the traditions of apprenticeship training or that the dual system of the German-speaking countries should be copied. The fact that the traditional occupations were declared obsolete during the post-war decades – not only as regards the concrete content of various trades, but also in terms of a coherent structure of competences which was valid for a worker's entire life – was obviously not only due to an incorrect assessment and forecast of changes in work processes and employment structures. The belief in the obsolescence of the traditional occupations must also be seen as a – presumably quite unconscious – reaction to the gradual destruction in most of the old industrialised countries of crucial features of inherited education and training systems and of the traditional occupational system due to social and economic developments in the post-war period.

It is quite sufficient to recall some of the features of the traditional occupational system: everywhere in Europe up to the middle of the present century, there existed centuries-old, very stable and traditional, *i.e.* rural and handicraft-based social structures. These social structures committed adolescents, depending on their social backgrounds, to clearly defined life perspectives and training pathways. The social structures not only accounted, owing to demographic growth, for the expansion of towns and industry. They also marked, for at least one or two generations, the cultural and occupational lifestyles and values of wage-earners. Patterns of occupational training and initiation that were steeped in tradition and often strictly regulated had survived many decades of industrial development and were often successfully passed on to the emerging technical and industrial production structures, particularly but not exclusively in the German-speaking countries.

Those who are striving to "re-professionalise" operational (subordinate) work must focus their attention on the social and organisational conditions underlying traditional occupational systems (and not so much on the details of syllabuses and the organisational details of "alternance" systems). The success of any such policy hinges on whether these conditions can be reproduced or whether functional equivalents can be found for them.

We shall now examine more closely two of these conditions, namely the attractiveness of operational, "manual" occupations (*Berufe*) and the existence of well-functioning occupational labour markets. A third, equally essential condition, *i.e.* the existence of a real "pedagogical" or learning environment in everyday industrial life should simply be mentioned here.

The first condition: operational tasks that are sufficiently attractive

The first basic condition for real "professionalism" (and for "re-professionalisation") of operational work is that normally gifted young people with good learning dispositions chose voluntarily, and after considering the advantages and disadvantages of all available options:

- to work for at least a good part of their working life as skilled production workers or in comparable service jobs ; and
- to participate in education and training in a "practical" trade or occupation.

Up to the 1950s, this was no problem: the children of the majority of the population – they can be referred to as "*les enfants du peuple*" ("*Kinder des Volkes*", including working-class children but also the still numerous children of artisans and farmers) – had scarcely any prospect in life other than operational "physical" work. Solid training in a trade that opened the door to expanding branches, first in industry and subsequently also in the service sector, was clearly an opportunity for most "*enfants du peuple*". This applied (even considering the traditional routes of upward mobility in the public service by becoming *e.g.* a primary school teacher, train driver or sergeant) particularly to the cleverest and most energetic of these children. Most of the others, who could not find an apprenticeship place with good future prospects, were more or less certainly destined to scrape a living as unskilled workers, servants and day labourers, or else as semi-skilled factory workers.

Anybody who had completed regular (the German word is "orderly") vocational training, was therefore considered part of the "elite" of working people. Even after the Second World War, one of Germany's most respected industrial psychologists at that time observed as a matter of course that, on average, only one in three young people was "sufficiently gifted" ("*ausreichend begabt*") to complete an apprenticeship successfully.

Moreover, there is much evidence that the technical and industrial dynamics of the developed countries in the first half of this century depended to a large extent on how far a country's industry managed to attract a high proportion of the most gifted "*enfants du peupie*" as apprentices and future skilled workers ("*Facharbeiter*").

The virtually explosive expansion of education in the decades following the Second World War was based above all on two developments. First, large sections of the population were no longer willing to see their children (like themselves) condemned to subordinate physical work. Second, increasing affluence, urbanisation and the play of political forces enabled them, for the first time in the history of the western world, to prevent this from happening by keeping their children longer at school.

Consequently, however, the recruitment of young people for practical, operational, "physical" occupations was sooner or later everywhere undermined by social developments. How soon or how late this occurred was probably hardly connected with the quality of practical training. The question was much more whether technicians and foremen (and middle management in the tertiary sector) at that time were mainly recruited, as in Germany, through the promotion of skilled workers (and skilled employees), or whether they were mostly hired directly from educational establishments, as in France for example.

In any case, the situation in all the old industrialised countries is now such that it is a matter of the most elementary common sense for virtually all "normally gifted" young people to aim for the highest possible educational level, while the traditional pathway of practical training after compulsory schooling is at best considered suitable for the weakest students, who presumably also lack most of the dispositions necessary to be a skilled worker or employee.

Under present conditions, the "attractiveness" of practical training means that precisely those young people who have a good chance of obtaining a higher educational certificate will freely decide – at least temporarily – not to go on with their studies, but to learn a practical, usually "physical" trade and actually practice it for some length of time.

If the problem is stated in this way, it is quite obvious that the actual difficulties lie not so much with the education system as with employment structures. Without radical changes in salary scales, in non-monetary working conditions and in rules, systems and habits of classification and promotion, any attempt to upgrade practical vocational training are bound to fail.

This obviously does not mean that the education system should not also make its contribution. This calls not only for much thought, research and experimentation. It undoubtedly also requires educational policy makers to get rid of some ideas which have dominated the debate for decades and which barely conceal powerful corporate interests of teachers (*e.g.* the idea that an occupation – "*ein Beruf*" – can be learned at school; or the prejudgement that only the knowledge transmitted in schools is really important). Moreover, there can be hardly any doubt that the re-valorisation of occupational expertise ("*Beruf*") and of vocational education and training is bound to fail if the intention is simultaneously to use the necessary reforms in education to also do some good for low achievers who are the victims of the school system.

The second condition: well-functioning occupational labour markets

The second basic condition for an efficient occupational system ("*Berufs-System*") is the existence of well-functioning occupational labour markets. This means labour markets in which:

- workers with defined and specific skills and competences (specific expertise) are available and in demand;
- at least the core skills of available and demanded qualifications are known to all the market partners and can be taken for granted by them;
- these core skills guarantee that newly recruited employees rapidly – at most after a short training period – reach high productivity under variable company contexts and conditions;
- employees with these core skills may expect the jobs on offer to comply with a more or less explicitly defined set of minimum standards of working conditions that are normally applicable to the occupational sector in question.

The best-known examples of such occupational labour markets are firstly the markets for craftsmen in traditional trades, which exist in virtually all European countries; second the markets for skilled industrial workers (and the occupations which are, in the German-speaking countries, built upon skilled work, *i.e.* in particular technicians); and finally the markets for people with very high formal qualifications, *i.e.* academically based occupations such as doctors, lawyers and engineers (it is not by hazard that they are the only ones to be called "professionals" in the English language).

Occupational markets in this sense are extremely valuable for economies and firms which wish to operate successfully in a context of great uncertainty and turbulence. Within each occupational field, such occupational markets permit a degree of labour flexibility and employment mobility which otherwise may be expected, at best, in activities where specific qualifications and competences are neither needed nor available.

However, these occupational markets do not emerge "naturally", nor can they be expected to develop more or less automatically as a consequence of innovative educational policy which aims at strengthening "vocationalism" and "professionalism".

Obviously, occupational markets require efficient training systems in which clearly defined competence profiles can be acquired on a very reliable basis. Yet this is only one requirement that constitutes by no means a sufficient condition for the emergence and functioning of such markets. Markets of this kind are highly artificial, extremely sensitive constructs that require a high degree of standardisation and regulation if they are to work.

Occupational labour markets – be it for doctors or for skilled industrial workers – can only be established and function on the basis of a very stable consensus involving all the groups and institutions concerned with the production and utilisation of the skills in a particular area. With the exception of a limited number of academically-based occupations (which for decades, if not centuries, have had their established rules of corporate autonomy governing not only training, titles and working conditions, but regulating also the annual number of newcomers to the profession), such a consensus must be actively established through appropriate policies. This, in turn, seems hardly possible without the active participation of legitimated (and this means also competent) trade unions.

Education and vocational training on the one hand and the conditions and functioning of occupational labour markets on the other are closely connected. Any policy which ignores this and, for example, refuses to look beyond the boundaries that have existed for decades between segmented areas of responsibility – *e.g.* between educational and labour market policy, between social and industrial policy, etc. – is bound to fail. In conclusion, two examples can be cited which illustrate this point:

First, there can be no doubt that the content and delimitation of individual occupations must comply with the pedagogical criterion of "learnability". This will quite often lead to attempts to define occupations rather narrowly and homogeneously from the point of view of the subject matter. At the same time, however, the occupations in any economy must also comply with the two – not necessarily compatible – criteria of versatility and marketability. A compromise that is acceptable to all can only be found *a)* if careful analysis is available which makes explicit the highly divergent expectations related to an occupation (and in many cases a methodology for such analysis remains to be developed); and *b)* if the different interests involved are confronted with one another in an open process. This presupposes among other things that there is no one dominant partner.

Second, the thorough mix of theory and practice, of systematic acquisition of theoretical knowledge and gradual build-up of experiential knowledge, which is typical of successful vocational training, obviously requires a combination of different places of learning. In reality, however – as France is having to learn at the present time – this is hardly possible without the active participation of future employers. Yet, the more employers engage themselves as training providers, the more urgently the issue will arise of the returns from this investment in very mobile human capital.

A solid solution to this problem lies largely outside the scope and possibilities of educational policies: the most urgent problems to be solved here relate to financing, but also to the protection of occupations and occupational titles, to guarantees against free riders and similar problems. However, it seems quite reasonable to assume that there exists for each occupation a minimum annual number of trainees, something like a critical mass of turnover and new entrants, which must be attained in each occupational market if it is not to collapse. This in turn allows us to arrive at somewhat more concrete recommendations for policy makers in this area: occupations should not be defined too narrowly; a regular flow of young people completing occupational training should be ensured; developments in supply and demand should be carefully observed.

3. PEDAGOGICAL OBJECTIVES AND ORGANISATION OF ALTERNATING TRAINING

by

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In many countries, alternating training programmes have sparked a renewal of interest among actors in the education system. Notwithstanding the conflicting positions that have emerged, there appears to be a broad consensus on the virtues of this form of training, which combines practical learning in the company with formal, school-based learning.

This consensus is ambiguous, however. Alternating training is sometimes presented as an alternative to academic failure and sometimes as a promising path for the preparation of high-level professionals. It is expected to lead, on the one hand, to an upgrading of practical know-how, and, on the other, to the development of abilities or behaviours that are unrelated to technical content (capacity for adaptation, ability to assume a role in a rapidly changing technical and organisational environment, spirit of initiative and so forth).

The desire to combine practical and school-based learning experiences is neither new nor original; it would be hard to find a pedagogical effort that does not share this ambition in some degree. The fact that many training institutions are now making explicit demands for alternating training suggests above all that it promises a solution to the problems now confronting the educational system.

This should not diminish the interest of debates on the pedagogy of alternating training, but these must not be separated from the social conditions of its development. Alternating training cannot be reduced to a "pedagogical model" whose efficiency would be independent of the circumstances and methods of its implementation.

1. A diversity of pedagogical practices and approaches

The observation of recent training activities in France from such a dual pedagogical and sociological point of view allows us to distinguish three kinds of "alternance" which differ with regard to their goals, their audiences and their place within the vocational education and training system.

Practices aimed at offering those with low academic levels an alternative to the traditional mechanisms of vocational education and training

This group includes activities carried out by the *Mission Nouvelles Qualifications* (New Qualifications Mission), in the framework of the *Enterprises d'Insertion* (companies aiding in labour market entry for populations in difficulty) or through the *groupes métiers* (occupation groups) set up by the further training structures of the National Education System (GRETA). What they have in common is the "remediation" approach to the transmission of know-how. In response to repeated failures within the traditional training structures, they seek to encourage the trainees' gradual discovery of their own self-sufficiency in concrete situations and their integration into a work group in order to re-establish the positive self-image and desire to learn that previous academic or social experiences have eroded.[1]

Unlike other approaches to the training of a so-called "low-level" population (*e.g.*, the methods of "cognitive modifiability" largely inspired by R. Feuerstein), they are based on neither didactic exercises nor the development of formal reasoning skills but rather, a more narrow symbiosis between the work activity and the acquisition of knowledge or tools contributing to a better understanding of the environment. The pedagogical transmission seeks to infiltrate, so to speak, the forms of learning experience encountered by the individuals in their workplace.

As the observations carried out during these activities have shown, the progress of these individuals presumes an explicit comprehension of the movements and procedures of their work, a transition from know-how (*savoir-faire*) to knowing how to express know-how (*savoir-dire*). This is not simply a reversal of the usual logic of school-based learning situations (whereby "you learn, you apply" would become "you apply, you learn") and requires close collaboration between the mentor and the person responsible for training.

Although thoroughly convincing results have been obtained with individuals in situations of academic failure and social exclusion or with employees locked into purely routine tasks, these activities are very demanding to carry out. Indeed, they entail a radical change in the perception of low-skilled work and in work relations in the shops as well as a transformation of how the training bodies or the departments involved actually function.

The term "remediation" successfully conveys this approach; its goal is less the transmission of knowledge contents than the transformation of a relationship to knowledge, permitting what is learned by understanding situations to be converted into a form of knowledge having value and meaning.[2]

Practices aimed mainly at familiarising students with the concrete conditions of their future work situations

The goals of this familiarising process vary in scope. In many cases, it is aimed only at creating an awareness of the conditions for carrying out the future occupation and an application of the academically acquired know-how in real situations. But it can also aim for a "recontextualisation" of this know-how, in other words, drawing on the various bodies of knowledge acquired, according to the logics proper to each discipline, in order to resolve concrete problems. In this case, alternating training occupies a greater role in the pedagogical process: there is recognition of the training nature of the work situation and interaction between practical and school-based learning experiences. This was the context for the creation of the vocational *baccalauréats* in France.

These practices only become fully meaningful if the "in-company segments" are sufficiently recognised within the educational system, by pupils and teachers alike. Quite often, and despite the integration of alternating training into the curricula, both groups continue to accord greater value to formal learning situations, which are considered the only ones capable of leading to a thorough validation of experience acquired and granting access to higher levels of training. Studies on the first generation of vocational *baccalauréats* show that the students' desire to prolong their studies beyond the *Bac* and the teachers' fear that their discipline will be downgraded very often leads to reducing the in-company sequence to a kind of parenthesis in a pedagogical logic that remains essentially school based.[3]

On the other hand, the development of these streams seems to have contributed to advancing the dialogue between company heads and teachers. The former are probably more aware of the necessity and constraints of a structured transmission of knowledge, while the latter are more concerned with preparing students for a work situation where the real conditions are often quite different from the exercises carried out in school.

Practices aimed at making the work activity the central locus for acquiring and developing occupational skills

This form of alternating training is naturally more widespread in the occupational sectors where know-how is accorded a greater place than formal knowledge. Such is the case for the majority of craft occupations, not because the craftsperson can do without formal knowledge, but because the craft of the baker or the goldsmith cannot be learned solely from books. This form of training, however, is not limited to the traditional occupations, in which dexterity or physical gestures constitute the only elements of professionalism.

It could easily be shown that the acquisition of competences in most occupations implies a long exposure to practice and the transmission of knowledge through co-operation with the "old-timers". It is true that the learning process of the future doctor or lawyer differs from that of the craftsperson insofar as the former entails a greater acquisition of theoretical or technical knowledge and largely precedes exposure to practice. These differences have significant institutional consequences, notably the separation of the sites and statuses proper to each of these two forms of learning. They are not as decisive as one might think, however.

One of the merits of the growth of alternating training has been to remind us that most of the knowledge and know-how implemented in work situations develops through practical experience. It is in this way that knowledge acquired in school ceases to be a series of statements absorbed one after the other or exercises carried out for their own sakes in order to become "hands-on knowledge" enabling the individual to deal with varied situations and acquire greater job autonomy.

The main question raised by this kind of practice is that of the choice between school and company as the main site for integrating vocational knowledge and know-how. Is it possible to prepare for certain occupations through either channel? In this case, what are the criteria for choosing one or the other? The individual's own inclinations with regard to the different forms of learning? The concern for promoting occupational identity? Mere practical convenience? Conversely, should this choice not be based first of all on the nature of the work activities and the qualification desired? These questions lie at the heart of the debates on the creation of "curricula" through alternating training.

2. The ambiguities of the theory-practice linkage

The three kinds of alternating training practice that we have just singled out have one point in common: they are all aimed at encouraging individual development and job autonomy by moving away from purely school-based forms of knowledge transmission and by seeking an active interrelationship (it is tempting to say "tightrope act") between practical and formal knowledge, between the "expertise" that develops through experience and the capacity for critical thinking that comes from school-based knowledge. From this point of view, the employee with a low academic level who learns the rule of proportions from the calculations he regularly carries out in his work or in daily life and the technician who attempts to understand an abnormality in the operation of automated equipment by comparing his experience with the equipment to his technical knowledge are both following what is basically the same approach of applying knowledge acquired through practice.

But the complementary nature of practical and formal knowledge does not imply the same pedagogical approach or the same process of vocational socialisation in the three cases cited above: the first involves social integration and remediation of knowledge; the second, relating school-based training and work socialisation; the third, a process of professionalisation through the actual work activity.

The definition of "real" alternating training is thus an illusion.[4] Each of these forms has its own practical requirements and social conditions for implementation that cannot be transposed at random to any vocational training and education situation.

A work situation does not inherently promote training

Taking this diversity of practices into consideration helps to avoid transforming alternating training into a universal principle that would make the transition to a work activity into a ''natural learning path'' eliminating the necessity for any structured transmission of knowledge. The idea of a learning experience that takes place by itself, as it were (''the way to become a shoemaker is to make shoes''), or by simple imitation, often backed up by the example of traditional occupations (such as agriculture), underestimates the complexity of the process through which know-how is transmitted in such occupations where ''learning happens all by itself''. These processes are often very long and involve a socialisation effort whose effectiveness depends on a particular form of social organisation (*e.g.* family or guild structures) which are not easily reproduced by institutional forms of training.

Furthermore, knowing how to carry out a task does not mean that a learning process has taken place. Teachers themselves become aware of this in classroom exercises. Students can carry out a mathematical operation that they have been taught without being able to apply this procedure to an analogous problem posed in different terms. There is no learning experience unless the individual manages to extrapolate the constants on the basis of competences that are specific to a particular field. What is true for exercises selected by the teacher in a pedagogical framework is all the more so in the context of work situations that do not always provide the necessary features permitting the individual to generalise.

If critics of the academic system are quick to stress that ''knowledge is no guarantee of competence'',[5] they neglect to consider the fact that the shortest path for carrying out the transpositions so necessary for individual adaptation to varied situations is often the learning of ''theories''. It would be just as illusory to think that all the knowledge needed for a given occupation can be ''extracted'', as it were, from concrete situations as it would be to think that knowledge can be transmitted without referring to its practical application.[6]

There is no monopoly on ''learning by doing''

Because we tend to consider ''concrete'' learning situations easier to carry out than ''abstract'' ones, and because learning difficulties are held to arise from cognitive defects rather than from the relationship to knowledge and training institutions, we sometimes make alternating training into an alternative path for those faced with academic failure. While in fact alternating training can indeed, under certain conditions, allow remediation for those who are the most needy both academically and socially, it can hardly be considered the means of training most appropriate for transmitting the ''basic skills'' (reading, writing, basic math) needed for many subsequent learning experiences. The downgrading of vocational education and the ''last resort'' function of apprenticeship in small companies over the last twenty or thirty years have only accentuated the ambiguous image of alternating training, and the efforts to make it a ''full-fledged training stream'' have not yet succeeded in setting it apart from these other structures.

Conversely, the observation that a certain kind of occupational "expertise" developed mainly through practice sometimes leads to making alternating training a privileged path for training high-level professionals. If the training of the most skilled occupations has always been carried out partly through a form of undeclared alternance (*e.g.*, in medicine, engineering, chartered accounting), their "expertise" nonetheless implies the mastery of theoretical knowledge and "abstract" methodological tools.[7]

Because of their difficulties in avoiding the false opposition between the concrete and the abstract and in breaking away from a purely pedagogical image, efforts to reform alternating training are caught up in inevitable paradoxes. The only legitimacy they can establish is that of an antidote to an academic system held to be isolated from the realities of the work world. This duality between alternating and school-based training ultimately hides the fact that in their own diversity, alternating training activities are above all a response to the variety of relationships to knowledge and ways of learning,[8] whatever the "level" of the individuals in the academic hierarchy. Likewise, we lose sight of the fact that these activities find their real justification in the transmission of knowledge that cannot forego hands-on practice or in the acquiring of know-how that cannot do without academic knowledge and explicit reasoning.

3. The place and role of alternating training in the educational system

Once alternating training is no longer seen only as a pedagogical principle but above all as a process that is socially constructed, the question of its effectiveness is no longer posed in the same terms. Comparing the impact of the two forms of training (alternating and school-based) on learning experiences loses some of its meaning, or rather, that meaning can only exist in relation to a particular form of alternating training that has been developed to meet determined objectives. At the same time, it is important to ask what this comparison does mean. In the words of Emile Durkheim, "A pedagogical transformation is always the result and the sign of a social transformation which explains it; in order for a people to feel the need, at a given moment, to change its education system, there must be emerging ideas and needs that the former system can no longer satisfy".[9]

The development of alternating training programmes is, however, a good indicator of the questions confronting the educational system in its relations with the production system, and it is also an important factor in the transformation of these relations.

The setting up of alternating training programmes requires critical examination of the transformation of relations between "knowledge" and "practice" that has been brought about by changes in work systems

Changing technology and work organisation does not simply modify the content of tasks to be carried out.

The existence of occupations remaining relatively stable in time and space used to facilitate the understanding of the activities they included. This stability also allowed for a process of objectifying the knowledge linked to work situations, for example, in the form of handbooks, compilations of procedures or practical knowledge and so forth. In short, practitioners and those responsible for training were gradually able to translate "the knowledge of practice, which is always finite and contextualised" (B. Charlot) into terms that could be transmitted within a training logic.

Without this objectification, the delegation of training to specialised bodies outside the companies becomes problematic. As sociological and historical analyses of the educational system show, "the school, a specific site separate from other social practices, is linked to the existence of objectified knowledge (...) knowledge that is written, defined, codified, concerning what is written as well as the way of teaching it and the practices of the students as well as that of the teachers".[10]

These changes impose a contradictory demand on vocational education and training. At one and the same time, it is supposed to encourage the transmission of practical knowledge that is difficult to articulate, and to allow individuals to acquire general knowledge applicable to constantly changing work situations. This double demand can be detected in the language of employers, who expect training programmes to "place young people in direct contact with the work world", to "fit the needs of employment-creating companies", to meet the "demand for 'just-in-time' competence" and at the same time, to "train a labour force capable of permanently adapting to change, utilising its individual competences at every moment and dealing with constant reorganisations" (F. Millon and G. Emerard).

Alternating training is not an "instant reply" to this double bind. It can even aggravate the contradiction insofar as it juxtaposes practical learning through the confrontation with concrete situations with the transmission of formalised knowledge that is disconnected from all vocational practice. On the other hand, it can represent a decisive element in the construction of "new occupational knowledge" which, unlike the old occupations, does not rely simply on an "operational man3vre" or manual dexterity but on "conceptualisation for execution", the understanding of technical logics underlying the operation of the equipment.[11]

In this context, it is the transformation of work activities and the occupational dynamic that makes the development of alternative training meaningful. Its relevance lies in two interrelated elements: the pedagogical solution it offers for the development of competences linked to changes in the organisation of work, and its contribution to building new occupational identities.[12]

The example of processing equipment operation activities is a good illustration. On the one hand, there are the old occupations, based on the knowledge of the products (glass, ceramics, chemical products, paper, cement) and the know-how derived from the daily use of the equipment tied to these products. On the other hand, there are the technicians carrying out study or maintenance activities based on in-depth knowledge of techniques tied to industrial automation. Between the two, it is possible to develop a new body of occupational know-how based on the ability to regulate the operation of this equipment through an understanding of its underlying principles and the capacity to react to the many incidents that occur in the course of production.

The creation of this body of occupational know-how depends at once on practical know-how linked to the particular activity and the contribution of theoretical knowledge necessary to make that know-how operational. The practical knowledge of the product, its physical and chemical reactions and the technical constraints on its transformation is not useless, but given the current conditions of equipment operation (increasing complexity of adjustments, quickness of processes, multiple parameters for monitoring, etc.), such considerations make sense only in the context of broader competence in operating automated equipment.[13]

Such an example is doubly interesting. On the one hand, it shows that the transformation of the work activity cannot be analysed as a simple passage from the "concrete" to the "abstract"; the competence involved here is tied above all to the concrete mastery of production operations and cannot be reduced to the mere application of scientific knowledge. On the other hand, the emergence of this new body of occupational know-how is not linked to technical requirements alone; it is mainly derived from the forms of organisation that, in this sector as in others, now tend to reinvest management production tasks with a determining role in the overall efficiency of industrial equipment.[14]

Alternating training constitutes a pedagogical attempt at responding to the problem of developing these new bodies of occupational know-how. It is probably not the only one. But the attention it attracts results most likely from the inappropriateness of a training system that has largely institutionalised the split between practical training programmes preparing directly for given occupations and the scientific training programmes giving access to design and management posts. The questioning of this duality implies a series of breaks that go far beyond the pedagogical field and touch on all the relations between the production system and the educational system.

The implementation of alternating training implies the elaboration of new forms of mediation between the companies and the educational system

If alternating training is part of a larger process of reorganising the links between educational and productive systems, it is not difficult to see why, relative to the interest it has provoked, it has only enjoyed a fairly slow development to date.

It can only become a major component of the training system through the elaboration of new forms of mediation between the companies and the training apparatus. This is shown by the analysis of obstacles to the development of alternating training activities in the occupations and geographical areas where they have received strong political impetus. Beyond the hesitations of young people unable to determine clearly whether these training programmes lead to employment possibilities that are at least equivalent to those offered by the traditional school-based system, the small number of activities undertaken can be explained by the difficulty of developing a mechanism that presupposes at one and the same time a close dialogue between company heads and those responsible for training, a dialogue among the companies themselves on the definition of their needs and practices for youth labour-market entry, the collective definition of the desired competences and forms of theory-practice linkage and the mobilisation of academic and vocational guidance bodies. The setting up of this mediation process necessarily takes time. It is no accident that this can be more easily carried out in the highly structured occupational branches which have had to respond quickly to a rapid transformation of qualifications (the plastics industry, for example), or in areas with existing forms of close co-operation between the companies and the educational system.

Nonetheless, obstacles to the development of alternating training cannot be reduced to a kind of inertia on the part of the actors in the educational system. The creation of these mediations can only occur through a process of calling into question the very training-employment relationship. Three dimensions of this relationship are particularly relevant: the companies' recognition of the experience acquired through training, the forms of validating this experience and the interrelationship of initial and continuing training.

In terms of the recognition of experience acquired, the development of alternating training is highly dependent on the companies' behaviour in hiring and career management. On the most basic level, there is a need for the companies to attach less importance to general training programmes and give greater value to the experience acquired through vocational education and training. In the French system, employers and teachers come back at each other with the same arguments: the former continue to favour high-level general diplomas because these streams are supposed to receive the best students, while the latter point to better results in terms of labour-market entry for these same streams in order to guarantee their growth at the expense of the vocational streams. On a deeper level, the occupational divisions themselves have to change within the companies. It is not possible to challenge the split between theoretical and practical training without an accompanying change in the occupational logics within the companies and an upgrading of the status of practical experience in career development. From this point of view, alternating training represents a significant instrument of change because it leads to a simultaneous questioning of training and its place in the building of occupational identities.

The forms of certification must also change. The academic system's traditional forms of validation confirm both the length of time spent in a degree programme and the acquisition of general or technical knowledge. Employers are increasingly countering this system with the "validation of competences", taken to mean the capacity to carry out a series of tasks in a defined work context. Should we be promoting – as the British have done with their National Vocational Qualifications – a national system of standards for competences which would facilitate the validation of acquired experience independent of the form of training (school- or company-based) and give employers clearer indications about the different certifications? Or conversely, should we be maintaining – as in France – a system of diplomas established in collaboration with the branches but controlled by a pedagogical authority?

Alternating training requires a different approach to the problem. It points up the limits of these two systems: the first guarantees that someone knows how to do something but does not allow any verification of whether that person knows how to transpose this know-how to other situations, while the second guarantees that someone knows something but does not allow any verification of whether that person can draw on this knowledge in concrete situations. Alternating training programmes lead to finding certain interfaces between validation by competence and validation by knowledge. This is the case, for example, with the attempts to take practical experience into account for certain diplomas structured around modular units, or with the search for interfaces between a diploma certifying the mastery of knowledge deemed necessary for a given occupation and branch certifications more directly oriented towards the validation of competences linked to a particular technical and organisational context. This kind of innovation in the forms of certification comes up against numerous institutional obstacles, but alternating training can help to get around these by favouring collective dialogue on occupational knowledge and the concrete search for the most appropriate means of acquiring it.

Finally, alternating training demands a reconsideration of the relations between initial and further training. Indeed, for those already involved in an occupational activity, isn't the first form of alternating training the one that consists of returning to training in order to acquire new knowledge but also to compare practice to formalised know-how? What alternating training activities attempt to accomplish in a relatively limited period of time can sometimes be brought about just as efficiently through the creation of a career path that alternates employment with access to further training. The forms of complementarity that tend to arise between academic certification and the certification of competences could gradually encourage this kind of path. In addition, with the development of alternating training under employment contracts, the companies may be led to make these training programmes available to their own employees or to develop so-called ''skilling'' training programmes along the same lines with their own personnel.[15] The institutional difference between initial and further training continues to fade, even if the funding channels still remain very separate.

NOTES AND REFERENCES

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2. This is the argument of B. Charlot in "L'alternance: formes traditionnelles et logiques nouvelles", *Education Permanente*, No. 115 (1993), special issue on alternating training.
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6. On this point, see the critique of contemporary pedagogical rhetoric made by H. Boillot and M. Ledru, *La pédagogie du vide* (Paris: Presses Universitaires de France, 1993), and the analyses of H. Steedman on vocational education and training in the building trades in three countries (England, Germany and France), forthcoming in CEREQ's quarterly journal *Formation Emploi*.
7. The training of the first engineers provides a good illustration, as demonstrated by H. Verin, *La gloire des ingénieurs* (Paris: Albin Michel, 1993).
8. This variety is not only individual but also social.
9. *L'évolution pédagogique en France* (1938; Paris: Presses Universitaires de France, 1969), p. 194.
10. B. Lahire, "Le 'programme de recherches' d'Emile Durkheim dans Education et Sociologie: un exemple de réactualisation", in F. Cardi and J. Plantier (eds.), *Durkheim sociologue de l'éducation* (Paris: L'Harmattan-INRP, 1993).
11. On this point, see the works of P. Zarifian, notably "L'émergence du modèle de la compétence", in F. Stankiewicz (ed.), *Les stratégies d'entreprise face aux ressources humaines – l'après taylorisme* (Paris: Economica, 1988).

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12. The latter is developed by C. Dubar in *La socialisation – construction des identités sociales et professionnelles* (Paris: Armand Colin, 1991).

13. *Cf.* the study of C. Marquette and S. A. Meriaud on the appropriateness of creating a vocational baccalauréat in production equipment and processes (Marseille: CEREQ, 1993).

14. In certain respects, the introduction of ''just-in-time'' management techniques in assembly industries have identical consequences for the work system and lead to a re-examination of operator competences on the same bases.

15. Several examples of this are analysed in the thesis of D. Brochier, ''L'entreprise formatrice'' (LEST-CNRS, 1993) as well as in the article by E. Verdier and M. Feutrie, ''Entreprises et formations qualifiantes. Une construction sociale inachevée'', *Sociologie de Travail,* No. 4, 1993.

4. ISSUES, PROBLEMS AND PERSPECTIVES LESSONS FROM AN INTERNATIONAL DEBATE

by

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As the opening remarks of this volume indicates, many OECD Member countries are showing renewed interest in different forms of training involving both school and company. Closer ties between school and company often appear today as a possible response to the contradictory demands facing vocational training and education systems (Box 1).

But if it is easy to reach a consensus on the need for bringing school and company closer together, the real problem is knowing under what conditions this is possible, and at what price. This was the first and foremost question that was raised during the seminar. It determines the second, which bears on the future prospects for different kinds of partnership.

These questions are often approached from specific angles, whether pedagogical, economic or institutional. The goal of the seminar, however, was to address them in a comprehensive and systematic way for all of the participating countries, in order to study the relations between these different dimensions and analyse the coherence of each approach.

The pages that follow summarise the seminar discussions on the basis of the documents presented by the different countries. These reports, along with the case studies examined during the meetings, illustrate once again the great diversity of national situations and raise the question of whether the solutions implemented in certain countries can be transposed to others and under what conditions. This diversity in turn calls for an attempt to clarify concepts and terminology.

A recapitulation of the national systems involving both school and company and questions of definition are presented in the first sections. Those that follow evoke the different explanations offered and especially the problems of linkage with the education system as a whole and the labour market. The final sections, dealing with problems of

Box 1

The Swiss presentation to the seminar summarizes these demands as follows: "The measures that affect the vocational training and education systems often seem to be miracle cures for many other social problems on the horizon (...). The vocational training system is supposed to improve social status, guarantee professional success, serve as a reservoir during periods when skilled personnel are scarce and lastly, provide concrete solutions when the labour market is dry. The education system in general and vocational training in particular are supposed to respond to complicated phenomena:

- providing training for highly specialised personnel while guaranteeing polyvalence and individual mobility;
- providing professionals capable of complex abstract reasoning while maintaining traditional forms of know-how;
- providing specialised training in new technologies while raising individual levels of general culture.

It is increasingly common, and especially in periods of technological progress, economic changes, expansion or recession, to see a polarisation of needs that are difficult to reconcile. In these troubled periods, it is tempting to make radical changes in orientation, when in fact the only realistic solution focussing on the individual would be to reinforce the links and eliminate the functional problems between the world of work and that of school."

financing and certification, add complementary elements that were considered important by the participants but which could not be discussed in depth during the seminar.

1. The school-company partnership: the spectrum of national situations

On the basis of the historical survey offered in the introductory note and the country reports presented at the seminar, the modes of linkage between school- and company-based training in the OECD countries can be divided into three groups:

- countries in which the "dual" system predominates (Germany, Austria, Switzerland);
- countries with predominantly school-based training, but which are trying to develop different forms of alternating training with in-company segments (Belgium, Spain, Finland, France, the Netherlands, Sweden);
- countries that are posing questions about the creation of a vocational training system and the role of alternating training within it (mainly the English-speaking countries).

The fact that a country belongs to a particular group is the result of a historical tradition that has structured not only the training system but also the labour markets and social relations in general. Distinctive national features can be observed with regard to: the responsibility for training (falling mainly on the State or the companies, and on the national, regional or local level); the degree of labour force mobility; company recruitment and promotion practices and the degree of consensual or conflictual relations between employers and employees. As we shall see later on, these different elements are interrelated and constitute a coherent whole. They determine the possibilities for co-operation between school and company, the value placed on the different training streams and the outlook for young people when they leave their training programmes.

This three-part classification is obviously oversimplified. It fails to take into account geographical, economic and cultural differences or the fact that certain national situations fall at the extremes or at the intersection of two groups. But it facilitates an analysis that will be illustrated by certain national cases.

The dual system and its evolution

The most representative countries utilising what is known as the "dual" system inherited it from a long historical tradition and share a common Germanic culture (Box 2). These include Germany, Austria and Switzerland (the case of Denmark is somewhat different and will be discussed later on).

Thus, contrary to what is sometimes thought, this system is thus neither rigid nor static. It attempts to evolve in order to confront a certain number of problems including: the tendency for an increasing number of young people to pursue general and university studies at the expense of apprenticeship; the fact that young people undertake apprenticeship following increasingly advanced secondary studies; the heterogeneity that results, as well as that observed between training given by small and large companies. Because of the demographic decline and the trend towards continued studies, a growing number of companies (especially amongst the smallest) are having difficulties filling their openings for apprenticeships, while others (amongst the largest) are starting to question the cost of training.

The Swiss report (see Part II) gives detailed information on the operating conditions of the dual system in that country, which are close to the German situation, and on the problems encountered.

The development of different forms of alternating training in the predominantly school-based systems

In the countries of the second group, the training system is institutionalised, but it has undergone a development characterised by:

- the desire to modernise an old form of apprenticeship but in the context of limited numbers of participants;

Box 2

The case of Germany is typical:

- The dual system has a mass base, involving the majority of a given age group (about two-thirds of young people benefit from it). This is an essential point in relation to the problem of enhancing the value of vocational streams. In Germany, these are not the streams of last resort for the very worst students, as is the case for apprenticeship in other countries, but the normal path for young people of very different levels preparing to enter a whole range of occupations (in services as well as industry).
- The company plays a determining role because it decides on the number of apprentices it will accept (under contract) and because young people spend most of their training time there. For most apprentices, finding a job in the company where they were trained is a major preoccupation.
- While the role of schools and teachers may seem comparatively minor, it must be stressed that training as a whole has an educational objective that goes beyond the specific training for a given work station or kind of job. This objective is assigned to the company as well as the school. The former is supposed to provide broad training first of all, then a competence for a skilled job and finally the opportunity to gain practical experience. The school is supposed to contribute basic vocational training, expand the apprentice's knowledge and general culture and create a solid base for continuing training later on.
- On the institutional level, the system depends on a co-ordinating body (the BIBB, or Federal Institute for Vocational Training) which helps to develop a formal definition of the recognised training programmes in collaboration with the social partners. The structures are not static; rather, the system is constantly developing and adapting to changing needs. The length and content of the training are co-ordinated on the federal level, while the concrete organisation is left largely to the companies. Changes in the system relate mainly to the organisational aspects which will be reviewed below.

- the introduction of in-company training periods within vocational instruction that is essentially school based;
- the recourse to internships in programmes designed to combat unemployment, which are usually aimed at young people in situations of academic failure.

These characteristics are found, for example, in Belgium, Spain, Finland, France, the Netherlands and Sweden. Denmark and Norway fall mid-way between this group and the preceding one in terms of the role of company-based training.

The search for a modern form of apprenticeship

In this group of countries as in others, apprenticeship is the oldest form of vocational training. In its institutionalised form today, it does not simply include company-based practical work but also a minimum of theoretical training. However, it only receives a small minority of the young people of training age, generally in the traditional occupational areas (craft trades, small business, construction, hairdressing).

Several countries in this group have adopted a policy of reviving and modernising apprenticeship. In Finland, for example, a 1993 law aimed at reinforcing apprenticeship as an alternative to school-based training which was considered more economical. But its place in the training system remains marginal. In France (where apprentices account for about 10 per cent of a given age group), great efforts have been made in recent years to develop apprenticeship in industry and the civil service. It is now being extended to the preparation of higher level diplomas, including higher education. There is also hope of thereby improving its image, which until now has been associated with academic underachievement and undesirable jobs.

Similarly, in the Netherlands, a policy favouring apprenticeship has permitted the number of apprentices to double between 1982 and 1989, and the aim is to achieve a better balance with the school-based path. In Sweden, a new form of apprenticeship was created a few years ago to combine in-company and school-based training, with responsibility shared between the two. Until now, however, this programme has generated little interest among young people as well as among the companies, who are suffering the effects of the recession and not in a position to accept trainees. Thus the numbers involved are extremely limited.

Periods of in-company training under academic control

For the large majority of young people in the countries of this group, vocational training is provided by the school under state supervision. It is carried out through programmes and exams defined at the national level. Recently, these countries have attempted to develop practical work schemes, in the company as much as possible but most often in the form of limited-term internships (Box 3).

The recent vocational training reforms adopted in the French-speaking community of Belgium and in Spain move in a similar direction. In Finland, 95 per cent of vocational training is school based, but there are attempts to develop apprenticeship and practical training. In Sweden there is ongoing discussion to find new forms of co-operation between the worlds of education and industry. There is a great deal of interest in Volvo's initiative, carried out in partnership with local authorities, to revive a school that would include both theoretical and practical instruction and prepare participants for continuing training.

In Denmark and Norway, the tradition of alternating theoretical and practical training is close to the Germanic model. In Denmark, however, for lack of places in the companies, practical training is often provided in workshops run by the school. In Norway, two years of school-based training are normally followed by two years of practical apprenticeship in the company.

Box 3

As can be seen from France's seminar report, this country is typical of the multiplicity of attempts at "involving the companies in a training programme that has until now clearly been dominated by the school, as a result of a choice made in the middle of the century in face of needs for reconstruction and growth and the chronic weakness of apprenticeship. Over the years, however, there has been growing awareness of the danger of being cut off from companies".

After 1980, "in-company educational sequences were introduced into the vocational high schools on the initiative of the schools themselves. These consist of two- or three-week periods of in-class preparation, further developed afterwards (...). In 1984/85 the schools and the companies were encouraged to sign twinning agreements allowing for a mutual exchange of services. Subsequently, the creation of the vocational baccalauréat called for compulsory in-company periods of about one-quarter of the total training time".

A 1989 act specifies that "schooling can, on the initiative of the education institutions and under their responsibility, include periods of in-company training (...). These periods are conceived in function of the instruction organised by the institution providing the training. They are compulsory in programmes leading to a technical or vocational diploma".

This led to the creation of "alternating training under academic control", which is currently being extended to other vocational training diplomas.

Most of these countries have implemented sizeable programmes to help unemployed young people with academic, family and personal problems enter the labour market. In the Scandinavian countries, this initiative responds to a permanent concern for the struggle against social inequalities. In the countries of southern Europe, it results above all from the necessity of dealing with the particularly high rate of youth unemployment. These programmes generally involve training placements aimed above all at generating an awareness of the reality of the world of work and occupations. They can lead either to a job or a training programme but do not constitute real vocational training (Box 4).

The changes taking place in this group of countries all involve experimentation with new forms of relationship with the company. On the State's initiative, these experiments generally affect the whole of a predominantly school-based system that is already institutionalised. This experimentation poses a certain number of problems, however, including: the difficulty of improving the image of apprenticeship which concerns only a minority of young people; the lack of places for trainees in the companies; uncertainties about the exact status of training placements organised in an academic framework as well as their value for training and their recognition; the risk of perpetuating training placements for

Box 4

Denmark illustrates the case of countries which have implemented a variety of formulas other than classical vocational training in order to combat the social exclusion of one segment of the youth population. These formulas entail different degrees of work experience:

- Schools for the unemployed under thirty years of age which offer training based on practical work and production. These are run by private foundations whose operating conditions are defined on the municipal level.
- Regional centres depending on the Ministry of Labour and offering training placements and work experience at the same time as training.
- Basic vocational training as defined by the Act of 1993. Aimed at young people who are not motivated by normal vocational training, it offers them a two-year training programme largely made up of a practical work experience in the company alternating with twenty to forty weeks of classes.
- Many local initiatives aimed at combatting unemployment, especially amongst young people; these rely on innovative methods and emphasise the development of personal qualities.

low-skilled young people that were initially conceived as temporary measures and which might only serve to delay their entry into the ranks of the unemployed.

Countries where vocational training is not part of an institutionalised system

The third group of countries is characterised above all by the absence of any real "institutionalised" vocational training system or recent attempts to develop such a system. The impact of apprenticeship is limited, and it does not necessarily involve any training outside the company. Training takes place mainly in general and vocational education institutions, which do not constitute a national system as structured as that of the preceding group. Alternation between school- and company-based training is still in the experimental stages; it is not widespread and depends on the initiatives of individual schools and companies. This group is essentially composed of English-speaking countries, such as Australia, Canada, the United States, Ireland and the United Kingdom.

The development of apprenticeship

The recent development of apprenticeship in this group can be illustrated by the case of the United Kingdom (Box 5).

The British tradition was transmitted to the United States, but there, formal apprenticeship involves adults in very small numbers, mainly concentrated in certain sectors

Box 5

In the United Kingdom, where vocational training is considered to be primarily the responsibility of the employers, apprenticeship dates a long way back and has long played an important role. During the 1960s and 1970s, several reforms introduced an element of training into the in-company work (generally in "Colleges of Further Education", locally controlled institutions outside of the national education system). According to the British participants in the seminar, the training aspect of the period spent in the company was a subject of debate. The response was probably more positive in large companies than in small ones. Quite often, learning was essentially acquired through practice, but this experience was nonetheless fairly broad, leading to a variety of skills and thus a variety of possible jobs.

In 1964, the Industrial Training Boards, responsible for promoting training in each activity sector, attempted to support apprenticeship through funding obtained from taxes levied on the companies and through the development of possibilities for training outside the company. However, the disappearance of the Training Boards, the abolition of the taxes, the creation of alternative programmes (Youth Training Scheme) intended to combat youth unemployment and the absence of government support have helped to explain the considerable decline in the role and importance of traditional apprenticeship since the mid-1970s (Gospel, 1994).

Apprenticeship has recently enjoyed a revival of interest, however. In December 1993, a vast dialogue with employers was launched on the creation of a modern apprenticeship system. The basic principles agreed upon include: the signing of an agreement between apprentice and employer defining the training programme and the skill sought; preparation for an occupation but with no guarantee of employment; 16-17 years as the normal apprenticeship age; 2-4 years as the variable length, depending on the abilities of the young person involved; state support for the anticipated training of 150 000 apprentices. It remains to be seen, however, to what extent this new form of apprenticeship will include alternating elements of education and training outside the company, thus implying the participation of the schools.

such as construction and graphics. According to Howard F. Gospel (1994), a decline since the beginning of the century is to be explained by a series of historical factors: the possibility of recourse to a skilled foreign labour force, the rapid advances in Taylorist organisation of work requiring little skilled personnel, and the weaker collective bargaining power of American unions as compared to British unions. Where it has survived, apprenticeship tends to come under the sole responsibility of the company and tends to be specifically oriented towards the latter's own needs.

The case of Australia is marginal in relation to this group insofar as apprenticeship there has retained more importance: in 1990, it involved 23 per cent of the country's economically active youth between the ages of 15 and 19 (which represented 2 per cent of the total labour force, as compared with 1.5 per cent in the UK and 0.25 per cent in the

US). Gospel has explained this tenacity by the nature of the skills required by small, non-capitalistic companies, the low volume of immigration (relative to the US) and the institutional framework set up by the State and supported by the system of social relations.

Apprenticeship in Ireland is controlled by a national public body, the Training and Employment Authority (FAS). The system includes alternating periods spent in the company and in a school or training centre. It has, however, been the subject of several criticisms notably bearing on: the small number of specialisations offered; the relatively low numbers of participants who pass through apprenticeship before entering working life (about 4 per cent); the absence of compulsory certification at the end of apprenticeship and the absence of systematic in-company training. A new system has now been set up to correct these problems and, in particular, to extend the apprenticeship option to a wider range of specialisations.

Towards a promotion of vocational education?

Most of these countries are preoccupied by the need to give a new impetus to the development of vocational education, and significant reforms have already been undertaken or are in preparation. The desire for closer ties with the companies and increased work experience for students is frequent, but this remains most often at an experimental level and is not yet the subject of widespread, systematic measures (Box 6).

In Australia, company involvement is considered essential to the improvement of the structure and quality of training. The basic principle is that training should result from partnerships between companies and training organisations: schools, technical institutes or private bodies. There is, however, no specific mechanism that formally provides for alternating training between school and company.

In Scotland, major advances were made in the 1980s and early 1990s to encourage employers to co-operate with training institutions on programme design and training by offering students opportunities for work experience. The participation of the Colleges of Further Education alongside the companies and the presence of the latter on the boards of directors of the colleges constitute the beginnings of a real partnership.

In Ireland, various employment preparation programmes including elements of vocational training are aimed at young school leavers without qualifications (these are financed by the EU). In addition, a recent "Green Paper" on education recommended new directions, including systematic recourse to alternating training.

This rapid overview of a large spectrum of situations brings out at least three distinct forms of partnership: apprenticeship, work placements included in school-based vocational training and remedial training courses. Their relative importance as well as their forms of implementation vary according to the three kinds of national contexts defined by the degree of institutionalisation of the training systems. In the course of the seminar, this diversity understandably posed problems of definition and terminology; these require clarification insofar as they affect the rest of this analysis.

Box 6

In the United States, a recent initiative for the transition from school to work, which will likely lead to a new law, defines the general framework of a new system based on the following principles:

- closer collaboration between the public bodies involved in education, training and employment at all levels;
- support from the states for the local development of partnerships between training administrators, employers and the social partners in order to facilitate the transition from training to employment;
- a programme to facilitate the transition including elements of apprenticeship in the workplace and others including school-based general and vocational education.

One of the strategies for applying these principles is co-operative education. This is defined as a method of vocational education based on alternance between school and work through a partnership agreement. Recognized by the federal government in 1917, it has never been a subject of formal legislation and has hardly generated any interest in recent decades, even though the numbers of people involved are far from negligeable (4 per cent of high school students). The fact that such students are no more successful in entering the labour market than the others has been attributed to the absence of any transferable certification (Stern *et al.*, 1994).

There have been several other attempts to revive apprenticeship and reshape it to the needs of young people. Mention might also be made of other work-experience programmes that carry academic credit regardless of whether the work is paid or not, but these are also products of scattered initiatives and do not fall within a national institutional framework.

2. Alternance: definition and functions

Problems of definition

The title of the seminar combines three terms: apprenticeship, alternance, dual system. The foregoing descriptions give an initial idea of the realities they express.

Apprenticeship may be defined as the combination of work in company and vocational training, according to statutory rules. A contract between the company and the apprentice specifies the commitments of the two parties: the apprentice receives reduced wages and the company provides training, normally under the responsibility of a tutor or apprenticeship superviser. In many countries, the in-company training, which is essentially practical, is complemented by broader training given outside, in an apprenticeship centre or a school. As we have already seen, this is not the case in countries where apprenticeship does not constitute an institutionalised system.

The dual system is the form of apprenticeship practiced in the German-speaking countries. The concept stresses the dual status of the apprentices, who, until the age of eighteen, attend school on a part-time basis while also enjoying the status of wage-earner. On the basis of such a status, there has been an effort to develop a truly complementary relationship between school and company. Today, this formula is sometimes replaced by that of the "triple" system, which entails a third training site for practical training that would exceed the individual capabilities of small companies, notably where state-of-the-art technology is concerned.

The term *alternance* is common in French but is only beginning to be used by English-language researchers. It designates any training programme with successive periods in the company and in a training organisation. In French it is used very broadly to cover not only the apprenticeship itself (and thus the dual system) but also job placements that may be very brief (two weeks) within a system of school-based training. It is also used for training programmes aimed at low-skilled unemployed youth that include a period in the company.

This diversity of concepts provoked contradictory reactions amongst the non-French-speaking participants in the seminar. Some welcomed it as a means of stimulating the imagination when it comes to co-ordinating learning processes in school and in the company but avoided taking into account all the implications of the "German model". Others expressed concern about the lack of precision in the concept of alternance, which, in their view, affected the clarity of discussions during the seminar. In this respect, it might even be argued that terms such as alternance and partnership tend to cover up the negative image of apprenticeship and the lack of a real alternative to school-based education with broad concepts that, so far, promise more than they actually deliver.

Objectives

Whatever the case, the alternating training programmes thus defined, target a variety of goals and publics. A broad distinction can be made between objectives that are pedagogical in nature and aimed at socialisation, and those of an economic nature.

a) The pedagogical, socialising function of alternating training is generally accepted. The move from school to company can be a particularly effective means of combining theory and practice. The two would be complementary, in that the school is better-equipped to organise theoretical learning and the company, to permit practical learning: as is sometimes suggested, "Let each partner do what he can do best".

The contribution of this double approach to the acquisition of the new skills required by the labour market will be examined later on. Such training can also provide vocational guidance by giving young people concrete examples of a fairly wide range of vocational activities, or allowing these to be experienced directly. It can also be argued that, by offering a different form of learning, alternating training opens other possibilities of advancement for young people with little inclination towards academic studies.

Alternance between school and company can better contribute to socialisation than schooling alone, by placing students in contact with the adult world, confronting them with the constraints of working life and giving them the satisfaction of doing concrete work.

b) On the economic level, the collaboration between schools and employers can allow the latter to communicate their needs more effectively and influence the orientation of the training system. By participating directly in training, each company can to some extent adapt it to its own conception and needs, within the context of a general programme that also takes into account the needs of the community.

Whether they accept apprentices or shorter-term trainees, the companies can benefit from the occasion to select future recruits. Both school and company have an interest in knowing each other better. This could lead to the disappearance of certain misunderstandings. Finally, company participation in initial vocational training can encourage the development of continuing training.

On a more general level, alternating training can improve the operation of the labour market by facilitating the transition from school to work. In fact, youth unemployment seems to be comparatively less widespread in countries where the dual system operates (OECD, 1994*a)*.

The relative weight of these different goals varies according to the forms of training and the particular country involved. The function of promoting labour-market entry is mainly performed by the dual system, which is essential in the case of Germany, but it is also relevant to training for unemployed youth, who are particularly in need of the socialisation aspect. School-based alternating training is aimed first of all at pedagogical goals but also seeks to bring the worlds of education and production closer together. In the United States, it could be seen as a response to the deficiencies of traditional education. Thus, preparation for employment is not the only priority, and the period in the company can just as well be included as a pedagogical tool within general education.

3. Pedagogical organisation

The problems of pedagogical organisation are addressed in the paper of Vincent Merle elsewhere in this volume. The remarks that follow are complementary; they reiterate certain points already made and supplement others with information from the discussions that followed the Merle presentation. These discussions helped to place the pedagogical dimension in perspective, notably by recalling:

a) that alternating training cannot be reduced to a pedagogical model whose effectiveness is independent of the ways it is implemented (and as just seen, these are extremely varied);

b) that there is one pedagogy for alternating training because it is above all a function of the diverse objectives pursued, but the focus here is mainly the function of vocational training.

After defining the pedagogical approach specific to alternating training, the practical forms of its implementation will be examined.

The pedagogical approach

The approach that relies on both in-company and school-based training arises from a critique of traditional academic pedagogy oriented mainly towards the learning of theoretical knowledge. It poses the question of how much integration can and should take place between these two elements and the choice of the learning situation. Traditional instruction does not effectively prepare for the work situation.

A critique of traditional pedagogy has been formulated by Senta Raizen (OECD, 1994*b)*, amongst many others. She notes in particular that this form of education generally entails "*a)* decomposing any competency to its smallest parts and teaching each part separately, on the assumption that, if each subskill has been learned, all the subskills can be put together and the competency will have been acquired; and *b)* teaching individual competencies or skills out of context on the assumption that each will then be applied appropriately in context". This approach leads to breaking down knowledge into separate blocks.

The contexts of school and company always remain fundamentally different. For example, the academic system is structured around a formal division of knowledge by disciplines and a rational order going from simple to complex. In fact, we do not necessarily learn in that order. In addition, school-based learning is based on the notion of prerequisites, which are not found in the work situation.

According to Raizen, "decomposition and decontextualised teaching of skill hierarchies is seldom effective either in education for general purposes or in training for work". Raizen stresses that all knowledge is socially constructed.

At the same time, traditional apprenticeship does not adequately respond to the new requirements of work in the modern world, which necessitates a basic comprehension of complex systems. "In such a complex environment, it is not a question of either blurring these artificial distinctions so that apprentice workers are provided with an opportunity to understand the problem-solving tasks that confront them. Apprentices need opportunities to gain both practical experience and situationally specific, theoretical understandings in a combination of ways (*e.g.*, provided on site, through simulations, or through formal instruction) that are relevant to the specific work situation" (OECD, 1994*b)*.

This kind of analysis calls into question the traditional split between academic knowledge and occupational skills. A more useful approach would be that of the learning experience with a range of possibilities: at one extreme, the closed situations that offer only one solution and are detached from reality, and, at the other extreme, those which are more open, closer to what is real and lending themselves to several solutions. Analysis of this kind of open situation can allow the trainee to undertake an effort of intellectual reconstruction.

The alternance-based approach

Traditional education is sometimes judged to be too abstract while apprenticeship training is based solely on practice. In the face of this double critique, another approach is clearly needed. This would entail "conceiving of an education based first of all on experience and not on theoretical concepts or learned knowledge. The approach involves identifying the problem situations of work which, in order to be resolved, require an 'intelligent' conduct and thus real skills, and then transposing these problem situations into didactic ones; (However) the difficulty is not just to begin with practice but also not to stop there. The apprentices have to integrate the different blocks of knowledge in and of themselves and be capable of transferring and re-utilising them in order to analyse work situations" (Geay, 1993, p. 56).

This is the approach in theory, at least, but it raises two questions: Is it equally valid for all objectives and all forms of training linking school and company? Can it be effectively applied?

Since the first question is addressed in the chapter by Merle, suffice it to recall once again that the preceding analysis is based mainly on the apprenticeship situation. In this case, the process can originate with the company, where most of the training takes place. But can the same be said for short-term work placements within a school system, let alone for training courses aimed at the transition to work? The necessary conditions to be fulfilled are considered in the next section.

Broader pedagogical objectives

Training that takes place in both the school and company is not simply useful for the mastery of technical knowledge. It can also permit addressing broader goals than those normally assigned to purely school-based training.

As has already been indicated, all vocational training examined here serves a function of integration. According to the country involved, it can emphasize civic identity (Sweden, for example), the occupation (Germany) or the company (Japan) (Lauglo, 1993). Alternating training is better able to carry out this function than school-based training, and several seminar participants noted that its main asset is the possibility of providing an initiation to company culture. The representative of a large British company, for example, stressed that the training it provided was not oriented towards skills but towards values and the culture at large, in order to create a climate of family-type belonging, as can also be seen in Japan.

This issue brings us back to the problem of the specificity of a training programme situated in a particular company. Here, the following question may be raised: in the case of a national training system, to what extent is it supposed to transmit the particular values of that company? In any case, there is no doubt about the usefulness of developing a certain number of behaviours, as has already been noted in relation to skills.

In Germany, for example, new pedagogical objectives were put forth in the mid 1980s. The ideal skilled workers were thus characterised by their autonomy and the variety of tasks they were likely to accomplish. The development of competences that are not only technical but also relational requires more than the simple imitation of the master. New pilot projects were set up to apply this pedagogical conception with the aim of giving apprentices control over the learning process. School-based instruction remained largely traditional, with a breakdown by subjects, but in the school as well, there were attempts to implement a new pedagogy based on the student rather than the teacher.

Integration or linkage of the two training components?

If school- and company-based training should be complementary, to what degree are these two components to be connected, and by what means? This issue poses problems of pedagogical conception, practical organisation and the mentality of those concerned.

The necessity for integrating the elements of training provided in school and company is often considered self-evident. For its defenders, this integration constitutes one of the most positive aspects of alternating training, which is supposed to give concrete form to the complementary relationship between theory and practice. The necessity of ''linking the two logics, that of learning how to do and that of talking about doing'', seemed obvious to most of the seminar participants.

Some of them, however, expressed doubts about the very necessity of total identity between what takes place in school and in the company. Duplicating one in the other, they argued, would hardly be useful and would probably lead to a negation of all structured transmission of knowledge. Nonetheless, it should be noted that these doubts were expressed in relation to fairly advanced students, who were considered capable of establishing the link for themselves and for whom this might be a healthy intellectual exercise. But whether the same can be expected of students at the first level of vocational training seems doubtful.

Conditions for integration

Although a close linkage between the two components of training is most often held to be desirable, it is only possible under certain conditions. The first is a formal definition of company-school relations in order to guarantee the acquisition of skills by the apprentices/trainees and to permit the monitoring of their progress during the period in the company. This can be accomplished through an agreement regulating the principles of co-operation, and above all, through a checklist. As indicated by the report of the French Community of Belgium (see Part II), ''it is only possible to adhere to pedagogical objectives through their clear formulation which provides a basis for discussion, negotiation, co-ordination and evaluation. Such a formulation is known as a checklist. This tool, a kind of memorandum common to tutors, teachers and trainees, consists of a detailed list of the competencies to be acquired during the in-company sequences (...). The checklist expresses the dialectical relations between school and company, as well as the pedagogical contract linking them''. In the case of fairly short-term internships placed in an academic context, it can be imagined that such documents are relatively informal and fall within local agreements. In the case of an apprenticeship supervised mainly by the company and leading to national exams recognised by all of the partners (as in Germany), the checklist is the result of a common effort and covers the entire occupation.

It is not enough, however, to formalise relations between parties; the mentalities also have to be oriented towards working together. In particular, teachers and company tutors must be extremely sensitive to the nature of the process undertaken. If they continue to develop their practices in the same way as before, this process generally breaks down. One can cite instances where teachers were not prepared to take into account the in-company part of the training but were forced to do so by pressure from the students. Teacher sensitivity does not emerge by itself but from the activity.

Drawing mainly on the French experience, Merle concluded: "It does not seem that we really know how to deal with the problem of the linkage between knowledge and skills acquired within a logic of production and those acquired within a logic of training (...). Alternating training is rarely anything other than the juxtaposition of logics." These analyses are confirmed by the experiences of several countries (Box 7).

Box 7

Even in Germany, while training integration is a major objective, it has in fact been only partially achieved. With the exception of a few large companies, there is really no comprehensive programme linking the two elements. There is only a harmonisation between the two programmes every semester, and even this is mainly institutional and exists for only a small portion of the programmes. The link between the components is established through the intermediary of the teachers, or the students, or occasionally the examinations.

When a single class includes student trainees dispersed amongst twenty-five to thirty different companies, it is not possible to have contact with each employer in order to co-ordinate the stages of the training process in detail. When more developped co-ordination is possible, the apprenticeship is more effective; conversely, students may be frustrated if they have to take responsibility for the co-ordination themselves. This does not have to be carried out on a day-to-day basis, but it is desirable to prepare the young people for the practical experience and then analyse it with them, every two or three months, for example.

It is the student's individual responsibility to go further in order to guarantee the harmonisation. This is often limited, however, by communication problems or a certain fear of contacts between the school and company environments that arise from divergent interests or a lack of mutual comprehension. This is far from the ideal, but it represents the reality.

Another problem is that of the division of labour amongst the actors and the balance between theory and practice. The increased importance given to theoretical training in the large companies reduces the traditional distinction between the roles of school and company. With the creation of inter-company training centres, certain schools complain of overlap with their curriculum. In fact, there is a need for flexible complementarity and co-ordination amongst all parties.

In Switzerland, the need for linkage is recognised, but the present situation is judged rather severely: "The dual system is based on a division of tasks between the company and the school and not on a partnership that would associate the two entities in a common training effort. This fairly rigid distinction creates a potential climate of tensions between the separate training sites, each of which tries to claim the value of successful apprenticeship for itself and attribute the cause of the failures to its adversary." Nonetheless, there is also mention of the development of partnerships between universities and training institutions for concrete research projects.

In France, the experience of the "*Nouvelles qualifications*" project aimed at young people with low skills has shown that there must be a minimum of relations between the training centre and the company. It is necessary, for example, that those responsible for training visit the workplace in order to see what the young people or adults are doing and discuss this with the managers and supervisors.

This consideration brings us to the most practical elements of training organisation: the place, the time and the means.

The choice of the learning situation

The pedagogy of alternating training is based on the principle of identifying problem situations. The choice of the learning situation is thus essential. It is possible to reproduce work situations in the school by simulation, notably through computers. This allows for more realistic activities than in traditional courses. But pedagogical simulations or robots can hardly replace the kinds of unknowns and constraints that arise in reality. Nor can such a simulation replace the inter-personal context and the requirements of co-ordination between individuals, which is extremely important. Alternating training can only be successful when young people accustom themselves not simply to a work situation but also to work relations and company values.

In order to identify those work situations which can contribute to training, it is necessary to begin by understanding the nature of work in the company. This is a difficult task but an essential one for setting up a skilling situation. In the second place, the work will only lead to training if the company admits that the individual evolves, but also that the work evolves, if the relationship between the creation of competence and the work develops in the very process of alternating training. This requires discussion of the company's pedagogical capacities and the ability of the training instructors to identify key work situations for such training.

The company may or may not provide a context for participation. It is thus useful to consider the organisation of work, but it is difficult for those directly involved to analyse it. It is also desirable for all parties concerned (tutors in the companies and teachers in the school) to be aware of the work situations in order to ensure coherence and continuity between the best training practices and strategies implemented in both the company and the school.

From a pedagogical standpoint, it is important to have a rich work context that provides the maximum number of possibilities for learning. But the company must get something out of the process as well. This is obviously not the case in many countries and companies; the period in the company may be reduced to the execution of simple, repetitive tasks with no pedagogical value, which can aggravate the trainees' negative attitude towards this kind of activity or even towards the company in general. If alternating training must be based on a specific work context, it is also necessary for the competencies acquired in this context to be transferable to others in order to guarantee that the trainee's horizons are not too limited and to provide the kind of mobility required by the labour market.

In Germany, there is concern about the risk of compartmentalisation because of very early specialisation, but also about a widening gap between the processes of work and learning, particularly in large companies. Learning about complex situations is a growing priority, but the difficulties this entails have already been noted. The potentiality for learning is held to be especially high when the work to be carried out by the apprentices fulfills three conditions:

- it is not too standardized;
- it provides an opportunity for the creative application of knowledge acquired elsewhere;
- it requires social skills (capacity for self-expression, group work, inter-personal relations).

Conversely, reservations were expressed about the usefulness of giving apprentices tasks organised along Taylorist lines. In general, it is obvious that the choice of an apprenticeship situation is a function of the site: the company or the apprenticeship workshop. This raises problems of organisation.

Organisational problems

Three questions were addressed in the course of the seminar: the apprenticeship site, the organisation of time and the role of in-company tutors.

Apprenticeship sites

Amongst the justifications for the move from school to company and vice versa is the school's inability to reproduce modern production conditions (because of the cost and rapid obsolescence of equipment), as well as the complexity of the production processes. But these factors can also limit the possibilities of company intervention.

Indeed, small companies are often specialised in one kind of production and cannot offer apprentices the entire range of equipment and types of production that would be useful for them to know if they are to acquire broad, transferrable training. Nor do these firms always have the means to provide the most recent and costly equipment. In addition, modern production processes are often complex and very sensitive, which means that it may not be feasible for the company to let a beginning trainee intervene at the risk of disrupting production and incurring significant losses.

Such considerations have led Germany and Switzerland in particular to create inter-company training centres, notably in those sectors with predominantly small companies, in order to allow apprentices to diversify their experience. This is why there has recently been talk of a "triple" rather than a "dual" system in these countries.

Training sequences

The degree of responsibility and autonomy that can be left to the students/trainees depends in part on the time they spend in the company: if this period is too short, they can only be observers; it must last long enough for them to be considered full collaborators (or producers) who can be entrusted with more difficult tasks.

The rhythm of alternating training varies greatly according to the countries, goals and publics involved. In Germany and Austria, the norm is to alternate between four to five days a week in the company and the rest in school. The new system in Denmark blocks out periods of several months for each kind of training; this is also the case in other countries for more advanced levels of training (*e.g.* engineers).

The first arrangement may prove more effective for a maximum integration of theory and practice, while the second may facilitate the organisation of in-company work. Switzerland, which previously followed the first model, is now turning more towards the second, with the idea that "the block courses represent an alternative that seems to be bearing fruit. In particular, the motivation of apprentices is improved, and teachers can set up a suitable curriculum, while the companies are better able to involve the apprentice in the work process".

In Belgium, it is felt that alternance with two days a week in the company and three days in school "does not permit a full knowledge of the company to be acquired. Many things can happen while the trainees are absent. In addition, they will not have the perception of time that is shaped by the length of a week or a production cycle. An apprenticeship organised over several consecutive weeks is considered better suited to the needs of certain apprentices. During this time, the trainees can assimilate themselves to the company's workers and live the rhythms and cycles, the fatigue, the start-up and halt of activities. However, the extended separation from school often makes that relationship difficult. In addition, it is very difficult to make pedagogical use of the activities experienced in the company" (see the contribution of Belgium, Part II).

The relationship between the site, the training period and the nature of the work carried out is also affected by the kind of activity and the student/trainee's level of training. If this level is sufficiently high and the training takes place over a block of time, it will be easier to find a relatively interesting and useful task to assign. On the other hand, when the level is low, there are always odd jobs that can be done without disrupting the functioning of the company, but their educational value remains to be seen. The problem may be even more difficult on the intermediate level and where complex procedures are involved (such as the process industries or the manufacture of sensitive parts).

The rhythms are also a function of each partner's institutional responsibility. If the company is chiefly responsible, then it should determine the rhythms of alternance according to its own constraints and activities. Short sequences pose the danger of resembling a tourist visit rather than a training period. This is especially a problem when the alternance is predominantly school based: in this case, the school tends to impose its own rhythms, notably in function of vacation periods, which may or may not correspond to the company's schedule. Such academic predominance tends to result in overly short in-company training.

In the case of the French vocational *baccalauréat*, there are two in-company blocks totalling a period of three months, most often outside the academic period. This can have contradictory effects on integration into the normal work process: in certain cases, trainees wind up doing the work of an employee on leave; in others, they may arrive at a time when normal working conditions have been interrupted.

As one seminar participant noted, the issue is not so much the length of the in-company sequence as the way it has been prepared for by the school and how it can be monitored and analysed. This leads us to the role of training instructors or tutors.

The role of tutors

The role of training instructors is fundamental for monitoring the work of the apprentices but also for the identification of appropriate work situations, the preparation of training material and assessment. Discussions during the seminar focused mainly on the respective roles of the tutor in the company and the teacher in the school or training centre. The teacher and the tutor should be in contact with each other, but without interfering with their respective functions: the tutor should not pretend to play the role of the teacher, and the teacher should not seek to reproduce the situation of the company in the school.

Some participants expressed the opinion that the tutors should, above all, be good managers and do not necessarily have to be trained for teaching. In Germany, by contrast, it is considered essential for tutors to have pedagogical competence. This is formally acquired and confirmed by a diploma giving the *Meister* a recognised social status. The post of tutor is a positive step along such a career path.

Once again, there is no model that can be easily transposed from one country to another. As a comparative study within the framework of a European partnership has stressed, the tutor's role will be very different according to the prevailing logic – adaptation to employment, orientation or skilling, with emphasis on training or employment (Geslin and Liétard, 1993). In other words, greater distinctions must be drawn between the role of the tutor in a company-based apprenticeship situation, that of predominantly school-based alternating training and that of work placements for low-skilled youth. In every case, the tutor must be made aware of his or her responsibility for monitoring in-company activity, but the formal definition of this role and the status and qualification of the tutor cannot be the same everywhere.

In countries seeking new forms of alternating training that are predominantly school based, the problem of the tutor arises, but it remains largely at the stage of intentions and experimentation. The Belgian report in Part II presents an analysis of what the tutor's function should be. It specifies three criteria for the choice of a tutor: mastery of the work, motivation and inter-personal relations and pedagogical abilities. In France, there is no formal definition of the status of the tutor responsible for monitoring trainees in predominantly school-based training programmes (or even in those initiated by the company and for its own use). Recognition of the tutor's professional status is not guaranteed. The tutor who also has production responsibilities may be more preoccupied by the latter, which are often given higher priority.

4. Linkage with the education system

The pedagogical organisation which has just been cited does not exist in the abstract but in a specific institutional and socio-economic context. It is necessary to consider where alternating training lies in the educational and occupational trajectory of young people and thus how it is linked first of all with the whole of the education system and then with the labour market. The very analysis of the educational trajectory of the population trained in alternance raises two questions:

- What are the characteristics of this population and the factors which condition its entry into alternating training programmes?
- Would greater possibilities for further studies increase the appeal of alternating training?

Entry into alternating training programmes

Who are the young people who enter an alternating training programme? How do they orient themselves (or how are they oriented) in this direction? The issue is particularly relevant insofar as the vocational streams, and perhaps even more so those which are partly based in the company, tend to have less status than the general streams. Three factors must be considered: demography, extended schooling and the relative appeal of the different streams, which is related to their relative weight – which one is the norm and which is the exception?

Demography

In most OECD countries, demographic change contributes to decreasing the number of candidates for apprenticeship. We shall return to the problems of flow regulation that this poses in relation to the company demand, which is itself subject to short-term fluctuations.

Increased schooling

The extension of schooling implies a change in the characteristics of the population oriented towards the vocational streams. Today, the students who opt for vocational training are generally those who have the most difficulty with general education. One explanation for the success of Japanese industry might be related to the fact that during the 1950s and 1960s, companies could recruit amongst the most gifted young people who, having received only very brief training, would consider industrial production a step upwards. Today, with the extension of schooling, these young people go on to university.

In Germany likewise, until the end of the 1960s, the training of skilled industrial workers through apprenticeship was addressed to an "elite", since only 10 to 15 per cent of an age group leaving the school system earned the Abitur (general secondary studies diploma) and fulfilled the conditions for entering university. The companies were thus able to select their apprentices amongst a group of young people in a "normal" distribution, whereas today they are forced to recruit them "in the lower half of the aptitude range" (Buechtemann *et al.*, 1993).

The seminar discussions elicited a warning, however, about the notion of an elite. It should not be deduced from this analysis that a fraction of the population is intrinsically unsuited to reach a certain level of studies, which would only serve to aggravate social inequalities and waste potential human resources. Rather, the point of departure should be that everyone is capable of acquiring a qualification. In other words, it is necessary to think in terms of progress and not seek to lock individuals into premature, one-dimensional classifications.

The parity of esteem of the different streams

The fact that the recruitment for vocational streams, especially when they include in-company apprenticeship, tends to be carried out amongst the students who are least successful in their academic training poses the problem of the parity of esteem between these streams and the general ones. Every international gathering that treats problems of vocational education and training seems destined to generate considerable debate on this topic.

The Marseilles seminar was no exception to the rule, and the role of cultural and economic factors in young people's preference for the general streams was discussed at length. In particular, the debate dealt with the comparison between premature tracking and exhaustive integration of general and vocational streams in terms of their ability to attract young people.

- In Germany, the division between streams is made early – too early in the view of certain participants, who were concerned about the premature orientation of young people not yet ready for it. But this clear division is seen as the best way to avoiding the downgrading of apprenticeship by allowing each stream to define its own objectives and offer more varied possibilities of advancement to young people with differing abilities.
- Conversely, in the United States and many other countries, official policy tends towards a more extensive integration of the different streams, which implies a greater similarity of contents and methods, including an exposure to the world of work within general education.

Rather than going into the entire discussion here, we shall limit ourselves to that part which specifically concerns alternating training. Several contradictory hypotheses can be advanced:

i) Given that young people's reluctance about the vocational streams is tied to a devaluation of manual labour in industrial societies, the fact that these streams involve a period in the company could contribute to discouraging them even further. On this point, one can cite the negative image of apprenticeship relative to school-based training in a certain number of countries. But this image probably has less to do with the period in the company than the fact that apprenticeship leads to occupations which are often amongst the least highly regarded because of the wages and working conditions (*e.g.*, building trades, food trades). However, this does not seem to be the case for "co-operative education" in the United States, which appears to suffer from an inherently bad public image (Stern *et al.*, 1994). In France, the fact that alternating training has been reinstituted for some time as a remedial method for young people with academic difficulties may also have contributed to its negative image (Charlot, 1993). Another unfavourable element in the French case is the fact that scores for the same occupational examination are better among those who prepared for it in a vocational school than those coming from the apprenticeship system.

ii) Conversely, the in-company period could contribute to upgrading the status of the vocational streams insofar as it offers several attractive elements to young people:
- those who are no longer interested in academic studies may be motivated by the practical experience and the real conditions of production and adult life;
- spending time in the company gives them the hope of finding a job more easily, through the additional training first of all, but especially through the connection with the company where the apprenticeship or internship takes place. Another French example can be cited here: the rate of placement on completion of studies is better for apprentices than for vocational school students.

In order to attract young people, the company must be able to offer a stimulating situation in terms of the work and training proposed, the environment and the remuneration. Employment prospects depend on both the kind of company and the immediate economic situation. In Germany, for example, it has been observed that small companies are more likely than large ones to accept apprentices whom they cannot subsequently recruit. But the decline of the economic situation has reduced prospects for post-apprenticeship recruitment in all countries.

The relative weight of the streams: norm and exception

The appeal of the streams depends on their role and their relative weight. In the Germanic countries, the predominant dual system is structured, institutionalised and recognised as a distinct entity. It is not placed on the same level as general training, which precludes comparison. But above all, because the majority of young people go through this system, it constitutes the norm, while general education leading directly to university has until now been the path of a minority, albeit a growing one.

In the other countries, on the contrary, general and vocational streams are part of the same system, with a single scale of values. Here, general education is the norm, in terms of both numbers and standards. The vocational streams are quite naturally those of last resort, where the students considered to be the weakest are channelled (often against their will). Such a situation only reinforces their negative image and feeds into a vicious circle. In general, this is even more true for apprenticeship.

France has gone from the first situation to the second. Until the 1950s, the technical and vocational streams were paths of upward mobility for an elite of modest origins. "But when the vocational streams become simply so many guidance options amongst others, the elitism of the educators, which reflects the social hierarchies, relegates all the cases of academic difficulty and failure into them" (Charlot, 1993).

Is such a development inevitable and irreversible? Can it be remedied by offering prospects for further education? We shall now consider this second question.

Possibilities for further study after alternating training

Access to higher level training programmes is considered a necessary condition for improving the status of the vocational streams. But this access should not necessarily be limited to the university, and the development of post-secondary vocational training is under way in many countries.

This is a major orientation in the United States, where the secondary level now tends to be considered inadequate for training skilled personnel, and all vocational training is postponed until the post-secondary level. It could be asked whether an improvement in the quality of secondary education would not also offer a solution to the demands for skills. But in any case, the development of post-secondary streams as an alternative to traditional higher education seems inevitable in most countries.

This development is of particular interest for alternating training programmes, notably those like apprenticeship which take place mainly in the company. Such programmes, which generally accord little place to theoretical and general subjects, do not usually prepare for university. This may well become an insurmontable obstacle for those who wish to continue their studies, and could thus contribute to lowering the status of the vocational streams in alternance. This is all the more possible insofar as the university generally encourages a kind of culture and mode of operation that are very remote from those favoured in the company (with the notable exception of doctors, whose training is largely carried out through practice).

Post-secondary studies which are better suited to this situation already exist. In Germany, they are aimed primarily at those who have successfully completed an apprenticeship and seek access to higher level jobs. But they are generally organised by employers' organisations and chambers of commerce. A more recent innovation is the Berufsakademie, which offers initial alternating training on the post-secondary level.

Another possible approach consists of promoting a system of double qualifications that would guarantee equal status to the general and vocational streams and attempt to resolve problems resulting from the diversity of existing students' abilities, profiles and motivations. This solution is envisioned in Germany and Switzerland, where the general and vocational streams are so distinct that they can hardly be co-ordinated much less combined. At present, the main trend is towards a return to the university at the end of apprenticeship for those who have already acquired the *Abitur*. But this too signifies longer studies, and while these may be advantageous for the students, they are also costly for them, their families and the community.

The case of France is very different, insofar as the two streams, general and vocational, are part of the same system and the vocational programme includes a large portion of general subjects. The recent creation of the vocational baccalauréat was notably aimed at providing prospects of advancement for first-level vocational diploma holders while giving them practical experience through placements in the company. This training is intended to lead to employment, and the general studies component is more limited. As often occurs in these cases, there is increasing pressure from students who have passed the exam to continue with advanced studies, but since they have little preparation, the rate of failure is very high.

These cases provide two contrasting examples of the problem of continued studies after alternating training. In order to resolve it, either the selection process for entry into higher training programmes has to validate practical experience and not simply academic knowledge, or a system of double qualification has to be instituted. This raises the issue of certification, which will be focused on further later on. In conclusion, it would seem that until now, the measures aimed at internal adjustments of the education system have had only a limited impact. As will be seen, the determinant factors are probably the mechanisms of the labour market and company practices.

5. Alternating training and the labour market

Given that one of the major functions of alternating training is that of encouraging youth labour market entry, the relationship between the two is worthy of special attention. This relationship can be approached in three different ways:

- Qualitatively: what are the skills and competences sought by companies? Does alternating training offer a better response to these demands?
- Quantitatively: does alternating training allow for a better regulation of training flow relative to recruitment possibilities?
- Finally, how is the experience acquired through alternating training recognised?

Alternating training as a response to market demands

Adapting the training system to the demands of the economy has become a top priority. This raises two questions for alternating training:

- Does it respond adequately to the new needs generated by changing skills (a result of technological transformations), the economic context and the organisation of work?
- In-company training should be able to provide better preparation for an immediate, specific job, but would it not be better to focus on the student's employability in view of a diversity of situations and occupational mobility? This question is related to that of the kind of labour market to be found in each country.

Does alternating training adequately respond to new skills demand?

The analysis of changing skills and competencies demanded by the companies is well known. It is helpful to recall the basic characteristics, some of which may affect the future of alternating training: the development of tertiary skills; higher requirements from employers, which practically exclude the least skilled workforce from the labour market; the increased importance of social and relational skills; the preference of large, modern companies for basic skills rather than those which are specific to an occupation, and for behaviours rather than technical knowledge.

The paper of B. Lutz in this volume addresses the topic in a particular way. It focuses on industry's needs for intermediate skills in the industrialised western countries and notably on the new skilled production worker. The author justifies his approach by the strategic character of this labour force for the economic competitiveness of such countries, which are increasingly confronted by competition from the newly industrialised countries. Intermediate-level skills are thus the most sought after, but there may be an increasingly serious shortage of them as young people tend to continue their studies and enter training programmes which prepare mainly for managerial and professional jobs.

For Lutz, the dual system is particularly well suited to the preparation of the necessary personnel, but it presupposes the existence of occupational labour markets, and these in turn imply a recognition and continued development of skills within the companies, with possibilities for advancement. This analysis runs counter to the dominant ideas of recent years in the industrialised western countries, ideas which hold up worker mobility and labour-market flexibility as prerequisites for the proper functioning of the labour market and the struggle against unemployment. Is such an orientation compatible with the need to train and motivate personnel at this intermediate skills level?

One objection to Lutz's analysis is that it concerns only a relatively limited population, since industry hardly occupies more than 30 per cent of the economically active population in the industrialised countries, and only a minority of its personnel is directly involved in production work (the rest are assigned tasks of preparation, marketing, management and administration). In quantitative terms, the great majority of the current and future jobs are to be found in the tertiary sector. This observation raises several questions:

a) should vocational and technical training be concerned mainly with those jobs that are most strategic for the economy's competitiveness or those that involve the greatest number of trainees? The analysis of various national policies suggests different answers to this question. They depend on the respective roles accorded to meeting economic demands and social needs, as well as the distribution of responsibilities (between public and private sectors, institutions responsible for education and employment) in the orientation and implementation of vocational training;

b) can we speak of tertiary jobs as a whole when this generic term in fact covers a large diversity of activities and skills? For some of these jobs (the health and legal professions, for example), it is already possible to speak of occupational labour markets which imply recognition of the qualification acquired, notably by a body of peers. Other tertiary jobs, by contrast, are characterised by a low skills level, a very high degree of mobility and growing precariousness;

c) to the extent that generalisations may be made, tertiary jobs can be said to require a particular combination of general skills and those that are specific to the company, in contrast to manufacturing jobs which place the emphasis on technical knowledge and know-how specific to an occupation. Is traditional vocational education suited to this situation? Would alternating training better meet the need for combining skills that are specific to the company and a broader training that prepares for a diversity of present and future situations?

While the dual system of the German-speaking countries is usually associated with the training of skilled industrial workers, it in fact covers the entire range of occupational activities, including those of the tertiary sector. Acquiring practical experience that leads to occupational expertise is just as necessary for economic efficiency in this sector as in industry. The development of tertiary employment is one of the elements that explains the growing importance of human relations and social skills. Given the necessity of co-ordinating complex activities, working in groups and privileging the commercial aspect at every level, these skills are increasingly demanded in all fields, including industrial production.

Broadening the bases of vocational training can open other educational paths for young people and meet the needs of both the labour market – which is seeking more adaptable workers – and of the individuals themselves – who should be capable of greater mobility.

It is not certain that companies are always sensitive to this need. According to the Swiss report (see Part II): "It must be recognised that at the apprenticeship stage, general culture is not a priority for the companies." The same report denounces "a flagrant gap between what the branches consider adequate general culture and what the individuals need for a career or higher-level training".

The belief that the main challenge to qualification came from the development of the new technologies was an error typical of the late 1970s (but one that still persists today). The new technologies lead above all to greater complexity of work systems. In order to be efficient, workers must communicate amongst themselves, and productive efficiency requires greater co-operation. In addition, the spread of automation generally means that the tasks left to workers are those which machines cannot do and which mainly involve human relations.

This rapid analysis raises two questions: How are these new company needs to be met, and does alternating training provide an appropriate response?

a) Companies can satisfy a need for skills in several ways: either by internal mobility and/or further training of the personnel in place, or by outside recruitment.

B. Lutz was concerned by the fact that the development and upgrading of skills within the enterprise, which was previously the strong point of the German system, is tending to be replaced by external recruitment at an increasingly high level of general education. In his view, this orientation could bring the German system closer to that of the United States (with regard to the extent of external mobility) and France (with regard to the priority given to an increasingly high level of recruitment). Such an analysis brings out the importance of company recruitment practices. These may combine with insistent social demand for a higher level of education, which would lead to the downgrading of intermediate training programmes and notably those involving alternance.

b) Alternating training can be considered to provide an appropriate response in both the case of typically tertiary skills that rely predominantly on human relations or that of the new occupational know-how that remains close to practice but presumes an overall understanding of industrial production processes.
The discussions brought up, for example, "non-objectifiable knowledge" (see Merle's contribution) and noted that this is diametrically opposed to the functioning of the school system, which is conceived so that "things work" in day-to-day reality as theory and programmes dictate. This is rarely the case, however, in the reality of company operations, and it is constantly necessary to adapt to difficulties and unexpected incidents. How could the school prepare for this?

While Lutz's approach focuses specifically on the need for occupational markets linked to industrial production, his analysis raises more general questions. It emphasizes that the labour market ultimately determines the value of the skills acquired and decides on the entry and career development of trainees. This is the subject of the last section of this chapter.

Preparation for employment or employability?

The point of view expressed thus far has been that of the companies and their needs. But the problem of the relationship with the labour market presents itself equally from the viewpoint of the trainees. Should they not be prepared for a broad range of work activities and fairly unpredictable developments? For the individual, the advantages of the broadest possible training probably exceeds the benefits to be had from training that is more specific but narrower and which would facilitate immediate placement at the expense of future possibilities. The capacity for mobility is imperative. As will be seen again later on, in relation to the role of the actors, companies are often divided on this point: the smallest ones, which barely have the means to provide for the training of their personnel, are often favourably disposed to training that can make the worker immediately functional in a very specific area.

The German system is sometimes criticised for its rigidity and its tendency to train solely in relation to future jobs in the companies receiving the apprentices (Marshall and Tucker, 1992). This risk is indisputable, especially in the small companies, but the training administrators are aware of it, and the policies implemented in recent years tend, on the contrary, to broaden training and guarantee its transferability between work stations, companies and sectors.

The analysis of the Germanic system of apprenticeship (*Lehre*) suggests that the training is conceived from the standpoint of training providers rather than that of trainees. It is the logic and perhaps the strength of the Germanic system to have maintained an approach based on the company and the occupation and then sought to broaden the training in order to better accommodate the individual. The other countries tend to take the opposite approach and encounter greater difficulties in bringing the actors together in a balanced situation between these two points of view.

The opposition between training for an immediate job and a broader employability is related to the characteristics of the labour market in each country or even each sector: everything depends on the degree of stability in the company and the respective values attributed to competence in an occupation and experience in a company. In this respect, comparisons can be made between:

- companies with predominantly occupational markets, which implies above all the recognition of the occupation (*e.g.* German-speaking countries);
- countries or companies with internal markets, which presumes career development within the company (large Japanese or French companies);
- finally, those where the norm is the external market, characterised by strong mobility (United States).

Each type of labour market has a corresponding logic of workforce management and training: the first group of countries are characterised by company participation in and recognition of initial training, and the second, the importance of continuing training. The coherence of the whole determines its effectiveness (Lauglo, 1993).

Market regulation of training flow

The question of adapting training to the needs of the labour market also arises on the quantitative level: How many young people should be trained in each occupational area? From the same standpoint, training systems are often criticised for their inability to adapt (or for their delay in adapting) to the needs of the economy. Could greater company involvement through alternating training provide a solution? (See Box 8).

There are two opposing points of view on this issue:

- alternating training can be considered a positive factor for adapting to flows insofar as the companies would only take those apprentices for whom recruitment possibilities exist (which is not the case for small German companies, for example, which take other factors into account);
- conversely, an element of instability may arise from the fact that the company's willingness to take on apprentices greatly depends on its economic situation and thus immediate circumstances. In fact, this can vary quickly and sometimes abruptly, without consideration for the more long-term skills requirements (notably in case of economic upturn, where there may be labour shortages).

According to the Swiss report in Part II, "In a period of economic expansion, concerns with hiring, renewal of skills and training are permanently imbedded in company strategies for personnel management. Conversely, the economic crisis has shown that cost reductions, notably in terms of labour costs, ultimately outweigh all other considerations of personnel management". Confronted with "this short-term retrench-

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Box 8

The German VOTEC study specifically addresses the problem of the regulation of flows. It emphasizes that, in principle, this regulation is subject to market mechanisms and companies are free to take on apprentices or not. Thus, Germany has gone through successive phases of surplus demand and surplus supply in function of demographic change and the short-term economic situation.

Beginning in the late 1970s, after the oil crisis, the public authorities (the federal government and the *Länder*) felt the need for compensatory measures including: the creation of one year of basic training, aimed not only at limiting specialisation but also at delaying the moment of choice and receiving young people who had not found a training place; the creation of training centres outside the companies, as already mentioned; and the inauguration of programmes for unemployed youth. The social partners preferred, however, that the federal government not institute compulsory measures, and the incentives have mainly come from employers' organisations.

Another aspect of regulation concerns the co-ordination between the flows accepted by the companies and part-time enrolments in vocational schools. The latter are supposed to adapt themselves, but their ability to do so in terms of facilities and personnel is limited, and budgetary restrictions make the implementation of an anti-cyclical policy difficult. The study also indicates that while the system has shown a certain ability to adapt to fluctuations in demand with regard to the overall number of places for apprentices, the adaptability in terms of structure by occupation is less adequate.

The precise alignment of training and employment has become all the more difficult to achieve insofar as the training courses are conceived more broadly because of increasing mobility.

In any case, the functioning of the market has not in any way guaranteed equal opportunities for all candidates in terms of academic background, gender and nationality. This situation has led the public authorities to intervene on behalf of the most disadvantaged groups.

ment in industry (...), it is the public authorities rather than industry that have expressed the sharpest concerns about this development (...). The reactions of industry emerged later and on a more sectorial basis (...). The concerns expressed are tied to declining skills renewal rather than a desire to contribute to the defense of a training system''.

Similarly, Denmark's presentation to the seminar showed that while the tradition of dialogue between ministry and social partners seemed to give a certain flexibility to the training system, this system in fact runs the risk of destabilisation relative to the short-term development of the labour market, which leads to variations in the number of places offered to apprentices. The Japanese case constitutes an exception insofar as the companies react to the recession not by lowering training budgets but on the contrary, by allocating more time and labour power to the training effort in order to improve the skills of the work force (Lauglo, 1993). But this case is already different because it involves continuing training within an exclusively in-company training system.

These examples emphasize the fact that regulation by the companies is limited not only by the economic constraints they face but also by a vision that is limited over time and by their specific needs. It is significant that this question was raised in relation to Germany, which is frequently singled out as an example because of employers' willingness to assume responsibility for training. In most other countries, by contrast, employers are criticised for their tendency to depend on the community and not give adequate attention to the problems of training.

This example illustrates the limits of an analysis based on cultural differences. It also shows that in any case, there is a problem of harmonisation between, on the one hand, regulation by the companies according to economic criteria and, on the other, taking into account of other factors such as the social criteria mentioned in the German case but also meeting the imperative of free access to training that was noted above.

These considerations apply mainly to the regulation of flows in an apprenticeship-type system. In the case of short-term training placements, the number of places proposed to trainees would seem to be less sensitive to variations in the immediate economic situation, but these training courses are also less effective in guaranteeing youth labour-market entry.

In both cases, the most frequent observation is that there are not enough places proposed by the companies relative to the demand (at present, small German companies are an exception). In any case, the problem of places offered is closely related to that of cost and financing: as will be seen below, the impact of the short-term economic situation varies greatly according to the cost of alternating training to the company.

Labour-market entry

In criticising the trend among young people to opt for general streams and seeking a remedy through adjustments to the training system, there is a tendency to neglect the fact that these young people and their families most often make a rational analysis of the prospects offered by the different training programmes. It is natural that they privilege the ones that are most promising in terms of:

- level of remuneration, working conditions and prospects for advancement offered by the different streams and occupations on the one hand; and
- degree of recognition of training by the employers on the other.

With regard to the first point, it must be recognised that higher training programmes generally offer better prospects than the vocational streams where remuneration and especially subsequent advancement are concerned. The inadequate supply of skills in certain fields, for which the education system is often held responsible, is in fact the result of the poor image of the occupations to which they lead, like the remunerations and hiring and working conditions associated with them. This is often the case, for example, in the building trades.

The differences amongst occupations on these various levels are a reflection of the social structure as a whole, but the responsibility lies above all with the companies. If it is not possible to influence their recruitment and career management policies, it is to be feared that other measures taken to restore the image of the technical and vocational streams will only have a limited effect.

The problem is particularly relevant to alternating training programmes, insofar as the countries where they have demonstrated their effectiveness are also those where their recognition has been the subject of agreements between the social partners. This explains the importance of the actors' roles throughout the process.

A broader analysis would have to take into consideration a whole range of structural and conjunctural factors, notably the structure of remunerations. This point was hardly discussed during the seminar, but certain studies consider it essential to the coherence of the dual system (Buechtemann and Vogler-Ludwig, 1993; Marsden, 1993).

6. The role of the actors

The study of the problems of flow regulation showed the limits of relying solely on the market for such a process. The problem arises particularly in the present period because of the instability of the training systems and their relations with the labour market:

- rapid changes in the economic and technological context and the difficulty of foreseeing skills requirements account in part for the company's loss of a frame of reference for recruitment;
- young people's employment prospects correspond less and less to their aspirations, and their entry into the labour market is increasingly difficult;
- a survey of policies followed by OECD member countries shows a general desire to make the training system more flexible and better adapted to the new demands; this raises the question of adjustment mechanisms;
- traditional adjustment mechanisms are proving increasingly inadequate: regulation by central planning no longer works; the strategies of the actors are not suited to the new context, perhaps because they are often frozen into traditional positions.

Actors and issues of regulation

Here we shall examine how the switch to alternating training influences the identity of the actors involved and the issues under negotiation.

Alternating training involves a greater number of actors and more levels of dialogue:

a) In a system entirely composed of either school-based or company-based training, the decision-making process is simplified because there is only one main actor. A training programme that includes both the school and the company involves at least two kinds of interlocutors, and even more if the responsibilities for education and training lie with different administrations.

b) A purely school-based system can be completely centralised and depend on only one level of decision-making. Similarly, a training system could depend only on local companies and decision making. When school and company are both involved, there must be co-ordination on the central level, to define academic orientations, and on the local level, for the liaison with the company and problems of labour-market entry. This leads to a multiplication of actors and greater complexity in the decision-making process.

c) In addition, every training system has to determine who evaluates training needs and objectives, who defines the programmes, who decides the flows of trainees, who delivers the training, who evaluates the results and who provides the financing. The answer to these questions becomes more complicated when the training involves both the school and the company because they can give rise to further questions and be more closely interrelated in a comprehensive negotiation.

Diverse positions

The difficulty of dialogue on the creation of a training programme involving school and company is not only due to the multiplication of actors. It also arises from the fact that the positions within each group of actors are not necessarily the same.

The diversity of the employers' positions has already been brought out in the national reports on historical developments and notably in that of Germany. The contrast is often made between modern industries, which are more sensitive to the need for strengthening theoretical training (coming largely from the school) and the crafts and traditional industries, which are more concerned with the acquisition of know-how (coming largely from the company). The divergences between the small companies, which want training for an immediate job, and the large companies, which seek employability, are well known. In the case of apprenticeship, they also arise from the fact that apprentices are not taken on with the same prospects: in Germany, recruitments at the end of the apprenticeships are traditionally less numerous in the small companies.

Spain's report in Part II emphasized the diversity of company strategies on the basis of a typology distinguishing three attitudes:

- companies which have a comprehensive interpretation of changes and a strategic conception of the necessary adaptation to the environment;
- those which are essentially concerned with reducing costs and increasing productivity;
- those which are conservative and have a negative, defensive relationship with the environment.

National cultural traditions have already been invoked above to explain the different degrees of company willingness to participate directly in training from one country to another. According to the Spanish report, for example, the main difficulty confronting the consolidation of apprenticeship was the absence of a tradition or "culture of apprenticeship and alternance'' amongst the agents involved. The respective weights of these traditions and of the economic rationale (which will be addressed later on) in company behaviours are difficult to assess.

In speaking of employer participation in training, adequate attention is not paid to the administrations and the public sector. Their objectives and their rationale can be different from those of the private companies. Last but not least, everything depends on the level of employer representation. In a certain number of countries, employer representatives tend to claim greater responsibility for alternating training on the grounds that the educational system is unsuited to the task. But their goal is above all to influence decisions about orientations, programmes and flows rather than taking charge of training per se. This collective demand for a greater role in training can be accompanied by the reluctance of some companies to take on apprentices.

The union positions are not necessarily uniform. Unions are divided either according to economic activity sectors or the occupational groups they represent, but sometimes also by ideological differences. Negotiation with weak, divided unions can be more difficult than with powerful federations which are indisputably representative of their members (as in Germany and the Scandinavian countries).

The positions of the partners and notably the unions are sharply marked by the history of labour relations. In France until the mid-1980s and in Spain even today (especially where apprenticeship is concerned), the unions have been opposed to alternating training or at least reluctant about it, seeing it as a case of the company taking over training for its own interests with the risk of exploiting young people.

Authorities may be influenced by ideological motives in their attitude towards alternating training: the desire to maintain the primacy of the State or conversely, to give the maximum amount of freedom to companies, or the intention to marginalise union organisations. They may also limit themselves to the role of arbitrator or dialogue co-ordinator.

Because of this diversity, the positions of the different negotiating partners are not necessarily homogeneous, and the opposition does not always lie between employers and employee representatives. The employees, for example, can easily find themselves in agreement with the large modern companies over the need for broad, solid basic training that prepares for employability, but this is not always true for the small companies.

Issues of comprehensive negotiation

These analyses emphasize both the necessity and the difficulty of an agreement amongst partners on the principles and operating conditions of alternating training. As has already been noted, the negotiation may be comprehensive, and it may involve trade-offs at various levels.

Thus, the responsibility for financing (to which we shall return) is not necessarily perceived by the employers in terms of ''who should pay'' but can also be seen in terms of the overall profitability of an investment that has amongst its trade-offs a certain power of control over the functioning of the system. In their view, this control should allow the companies to obtain the ''product'' of the education system, in other words, the skills that they really need. But these skills are not necessarily equivalent to the diploma, which is the usual criterion, in France for example, for determining qualifications and remuneration. Companies may thus be left with the feeling that for the entire working life of their personnel, they are bearing the costs of diplomas that do not necessarily correspond to their needs because the companies themselves have not been adequately involved in the definition of the objectives.

Even when there are consultative bodies that are increasingly attuned to their demands, employers still see the overall education administration as a separate world that functions according to its own logic. Decentralisation and the involvement of companies in the case of alternating training can, however, reduce this feeling if the interlocutors are brought closer together.

Union leaders, for their part, have two main concerns: that the training should lead to the permanent employability and mobility of wage-earners rather than to the particular job that the training company may be preparing for, and that it should pave the way for a long-term career.

These issues emerged fairly explicitly at the round table organised by the French partners during the seminar. The discussion notably illustrated the different diagnoses of the training-employment relationship: the employers tend to place the responsibility for the shortage of skills on the education system, which they do not consider adequately placed to take responsibility for the whole of vocational training. The unions contend that the employment conditions in certain occupations explain the lack of candidates for training. The employers denounce the obsession with the diploma that favours general over vocational studies; the unions regret that the companies themselves do not grant sufficient recognition to vocational diplomas and prefer to recruit young people with higher levels of general training.

Although there were few illusions about the possibilities offered by a revival of apprenticeship, the French partners were nonetheless in favour of developping and diversifying forms of training involving a partnership between school and company.

Many issues and actors according to forms of training and national contexts

This initial description of issues and actors is not equally applicable to the different kinds of training and national contexts.

With regard to training procedures, only apprenticeship offers an intermediate situation between employment and training. This requires first of all a definition of the apprentice's status, in terms of pay and working conditions relative to those of salaried employees. It thus affects employer and employee representatives and may be the subject of national agreements and a government regulation. This represents a significant investment for companies, one that concerns employers as a whole and may be the subject of a comprehensive negotiation with the State, calling into play all the advantages and disadvantages that the employers can expect from their participation in apprenticeship. Finally, apprenticeship also poses the problem of labour-market entry for the apprentices, which may require dialogue with the various actors involved locally.

By contrast, short-term work placements in the company in the context of an academic programme are usually no more than a pedagogical tool. They do not require the definition of worker status; at most, they may be the subject of an agreement between the school and the company or remain completely informal. They may also come under partnership agreements with the local authorities.

Depending on the country, education and vocational training, like initial and continuing training, may come under different administrations. The responsibility for education may be centralised at the federal/national level or at the state/regional level, or very decentralised on the level of local school districts or communities. The levels of negotiation or dialogue between these administrations and the employer and employee representatives may also vary. Likewise, the traditions of social dialogue and involvement of employee representatives are more or less long-standing according to the country.

Where alternating training is concerned, an additional element arises from the fact that the training systems on the one hand and the kinds of social relations on the other are both products of a specific history. In particular, distinctions may be drawn between:

- countries where the social partners – employers and employees – have a tradition of consensus, or at least dialogue, which is naturally applied to training;
- countries where a more conflictual tradition has long fueled the distrust of employee representatives relative to company participation in training, but where an awareness of the need for closer relations has allowed the gradual creation of procedures for dialogue;
- finally, countries where employees have no institutional representation in the structures for dialogue and are, in fact, usually absent.

Partnership: frameworks and forms

Sites, levels and forms of partnership

The dialogue amongst actors on different levels takes place within the institutional contexts particular to each country (see for example Boxes 9 and 10). The German contribution in Part II, along with an in-depth study of the history of Germany's training systems (OECD, 1994*c)* brings out the importance of a tradition of commitment and dialogue amongst the social actors as a prerequisite for the effectiveness of a training system based on alternance. In practice, following the principle of dialogue which governs the definition of training regulations, no decision concerning objectives and programmes can be made without the prior agreement of employer and employee representatives. But since education (and thus the vocational schools) come under the *Länder* responsibility, while vocational training comes under the jurisdiction of the federal government, a minimum of four actors are involved.

In France, the beginnings of decentralisation and the desire for greater company involvement have put an end to the quasi-monopoly of the Ministry of Education. Employer and employee organisations are consulted on objectives and needs; the regions are now responsible for apprenticeship and investments in the schools. But the imple-

Box 9

In Denmark, vocational training comes under the Ministry of Education, but the social partners play an important role on all levels. On the national level, a Vocational Training Council, including employer, union and administration representatives, advises the minister on the objectives, structure and content of the training, the instructors' qualifications, admission requirements and so forth.

For each occupational field, a committee of employer and employee representatives offers recommendations on programming, exams and student placement to the minister. He approves the list of companies accepting apprentices and draws up the contracts signed between them.

In addition, a very extensive decentralisation involves the the social partners in local committees which are consulted on the detailed programmes. They also participate, along with representatives of the local communities and students, in the largely autonomous committees overseeing the management of the schools.

Box 10

In Spain, a 1987 study recommended the establishment of a legal, institutional and financial framework encouraging the involvement of the social actors and the various administrative levels, specifically the local governments; at the same time, it called for the creation of mechanisms encouraging the emergence of an ''alternating training culture'' in companies. In the past seven years changes have mainly affected the institutional framework.

This includes an organic law defining the training to be set up by the year 2000 and the principle of apprenticeship contracts. These mechanisms fall within both training and employment policy and thus involve two kinds of official bodies. But responsibility for school-based training and preparation for employment has gradually been transferred to the autonomous communities, which encourages the creation of specific participatory bodies. In addition, the chambers of commerce are being given a new role in relation to the work centres where training courses take place.

At the same time, there are various fairly spontaneous experiences seeking to build close relations between the world of training and the world of work. Most of these are initiated by the local authorities and vocational training centres.

mentation of school-based alternating training depends essentially on local relations between schools and companies. In the United States, as in most other English-speaking countries, there is a tendency to multiply such local relations and partnerships, between the various education system administrators and with companies and local communities, but rarely with employer representatives.

Notwithstanding this variety of situations, a typology could be established according to certain basic criteria: centralisation (or decentralisation), formalisation (or not) and consensus amongst partners (or not).

Institutional context and social innovation

It has already been emphasized that alternating training is an institution in certain countries and an innovation in other. This observation gives rise to several questions: is alternance itself a factor of innovation? What are the factors favouring innovation and its spread?

The first question suggests a possible contradiction. The most comprehensive form of alternance, apprenticeship, has an ancient history rooted in the craft trades tradition and aimed above all at the transmission of the craft. Even today, apprenticeship is relatively more widespread in small companies, notably those of a cottage industry nature and which are not particularly recognised for their innovations. Is this compatible with the desire to train a competent labour force for the future? Or are we up against the possibility, already mentioned, of a conflict between the training of an elite in order to have the most competitive economy and the training of the greatest number in order to fill jobs?

Another possible obstacle is tied to the different partners' ideological positions, which are the product of an historical legacy and tend to take on an institutional character. These could block negotiations which might be more easily conducted on the local level, where they could address concrete measures rather than matters of principle.

The possibilities for advancement are also a function of the existence (or not) of a regulatory framework likely to encourage innovation. In certain cases, an overly rigid framework may be an obstacle to the creation of a partnership. Two examples may be cited.

In the case of the United States, the absence of a regulatory framework imposed on alternating training would seem to give the actors considerable freedom to improvise empirical local solutions. Conversely, in Spain, the regulatory framework seems to be an obstacle in the face of the proliferation of decentralised experiences. At the same time, this framework is not necessarily translated into reality. The involvement of the social actors and their organisations thus seems to be the only way of protecting institutional initiatives from losing their substance.

Another issue raised by innovation is that of its spread and generalisation. A context that gives local actors a maximum of freedom may be propitious to innovation, but it does not facilitate its spread. In a centralised system, innovation may be decided by the central authorities through regulations. In a more decentralised system, it may be the subject of incentives on the part of the federal or national administration: subsidies, for example, may be offered to local partnerships or desired programmes (this is often the case in the United States). But this dissemination is not systematic and depends on the motivation of the local actors.

In other cases, the spread of innovation can take place through direct imitation from one state to another (as in the United States) or from one region to another (as in Spain).

7. Cost and financing

Although the financing of alternating training was not discussed in depth during the seminar, it was mentioned on several occasions because it is an essential issue for the applicability and implementation of the system. The form of alternance instituted is largely determined by the source of financing. Three kinds of questions must be considered:

- Is it possible to evaluate the cost of alternating training and compare it to the benefits for each actor?
- Who should pay for alternating training?
- To what extent should companies be subsidised and apprentices remunerated?

The cost-benefit analysis

Analysing the cost of training is more difficult for alternance than for an academic system. How is training to be separated from work during the period spent in the company? How is the time that the tutors devote to training to be evaluated in relation to their other supervisory and production activities?

These difficulties make comparison across countries hazardous, and the figures cited by different sources for evaluating and comparing company training expenditures (which generally includes both initial and continuing training) should be used with caution.

The question arises notably in comparing the respective costs of school-based and alternating training. For the public budget, the second appears to be less costly, and it can be imagined that in a period of budgetary restrictions, this would encourage its development. This is the argument cited in the Finnish report to explain the renewal of interest for apprenticeship in that country. But this situation raises the question of cost transfers amongst those involved and their trade-offs. First, how are the costs and the benefits of training to be equalised, for the various partners and notably for the companies?

From the vantage point of apprenticeship, an initial factor is the relative cost of training and the different kinds of workforce in each national economic context. Researchers who have compared, for example, the situations in Germany and the United States, have emphasized that the way costs are shared constitutes an essential factor for the viability of the German dual system: the relatively low level of pay for apprentices would facilitate the net cost of employing young people (Marsden, 1993), while the reduction of wage differentials between skilled and non-skilled workers would allow the companies to train a skilled workforce at a relatively reduced cost through apprenticeship (Buechtemann *et al.*, 1993).

The second question is whether the companies adopt a short-term perspective requiring immediate profitability or a long-term vision of training as an investment. The first position is often that of the small companies, for whom apprentices represent above all a productive, low-cost labour force which is given mainly practical training and which will not necessarily be recruited at the end of the apprenticeship. In any case, studies show that training costs are considerably lower in small companies. The operation can thus break even or even earn a profit for them in the short term – which sometimes helps to feed the suspicions of union organisations that certain companies turn to apprenticeship in order to obtain cheap labour.

This is not the case for the large companies when they provide theoretical training and when they can hardly integrate apprentices into complicated production processes. But they can expect to recover this investment over time, insofar as they will recruit the apprentices whom they have been able to observe, select and train according to their own needs. Such a logic presumes that these apprentices will not leave in the meantime and be recruited by the competition. Everything depends on the functioning of the labour markets, and Lutz's paper noted that this risk increases with workforce mobility.

The temporal dimension of the investment in training raises another question: that of the preference for initial or continuing training. The relationship between the two can be conceived in terms of compensation: the more initial training there has been, the less continuing training will be needed, and vice versa. But it is also possible to reason in terms of complementarity, whereby (as in Germany) a good initial training programme is seen as a prerequisite for continuing training.

Profitability also depends on the population involved. According to Buechtemann and Vogler-Ludwig (1993), both companies and workers invest in the areas of training where the return is the highest: "The companies favour those who already have the best level of education, but it is also the most educated workers who derive the greatest benefits from continuing training. This limits the economic risk but leads to discrimination against the least educated." This observation leads to the broader issue of cost distribution on the national level.

The distribution of financing costs

In fact, it is difficult for companies to arrive at precise calculations of the costs and benefits of their training effort, and this is not the way they operate. Their reasoning is more pragmatic and incorporates other factors.

It has already been observed, for example, that the companies may consider as indirect costs recruiting and permanently employing graduates whose skills do not correspond to their needs. Conversely, the ability to influence training orientations through representation of the sector's common interests within negotiating bodies may provide compensation for the cost of their financial participation in the training programme.

These interests can come into play on the level of a particular branch or more generally on that of the economy's overall competitiveness. The advantages and disadvantages may not be the same in each case, and they may be interpreted differently if the individual companies are faced with a difficult economic situation, they will deal with their survival first of all and relegate the common interest of investment in workforce skills to the background.

The long-term common interest may also include the social concerns that were expressed during the seminar: a certain number of companies now feel that they can no longer ignore the problem of youth labour-market entry, insofar as it would destabilise society in the long run.

An analysis based on purely economic rationale, to the extent that this is possible, applies above all to apprenticeship, which can represent a significant cost for the company. The acceptance of short-term trainees has more limited effects, but the idea of indirect compensation is equally applicable.

The companies' cost-benefit considerations must be kept in mind when a simple transfer of training costs from the government to the companies is envisioned. Under what conditions will the companies accept, and in exchange for what compensation? The risk is a sacrifice in quality (the importance of which was frequently stressed during the seminar), at the expense of the students first of all and of the entire economy in the long run.

In terms of the students, the analysis varies according to their level. Those with the least skills may be faced with a choice between enrollment in a training course and unemployment; depending on the unemployment benefits, it is not certain that the training course will seem more profitable to them, at least in the short run. For the intermediate skills, the choice lies rather between general and vocational training (already discussed) or between vocational streams. On the highest level, the fact that a certain number of training programmes are not free, and even expensive, acts as a deterrent and has led management schools (in France, for example) to offer an alternative form of training which places the main burden of costs on the employer in exchange for the possibility of choosing among supposedly "elite" candidates.

Variety of national solutions

At present, the institutions and policies related to the financing of training vary greatly from one country to another. In France, school-based training is free and supported by the State, thus by the taxpayers. Companies are subject to an apprenticeship tax, and, since 1971, they must contribute to the training of their employees (in principle, it is continuing training but can also be a complementary initial training).

In Germany, by contrast, companies have always favoured the maintenance of a system whereby they assume all training costs, on a voluntary basis. This position is dictated by the fear that state intervention would compromise their freedom and their ability to influence the orientation of the system.

In the Netherlands, negotiations were recently conducted with the employers' organisations for the development of alternating training. The employers had been afraid that the administration was only seeking to shift its financial responsibility onto the companies, but after the government committed itself to maintaining its budget for training, the majority of the companies declared their readiness to participate in the programmes.

Subsidies and remunerations

The fairly general observation of a lack of places for apprentices, which is tied to the inadequate motivation of the companies, raises the question of whether subsidies should be provided to companies that participate in training, and if so, in what form.

In Sweden, for example, there has been discussion about the creation of funds that could help companies to accept apprentices. In Denmark, there is talk of subsidising or paying for apprenticeship slots. In addition, many countries have programmes for unemployed young people which generally involve alternating training, and these are financed by the State for the benefit of the trainees and/or the companies.

It has been suggested by some at the seminar, that a transfer of most of the cost of alternating training to the state would become the dominant trend. For others, the future lies in the sharing of costs and partnership.

This development raises the broader question of who is to assume responsibility for training: the companies or the community? This issue is related to the nature of the training system and its financing, and it is a function of national traditions. Moreover, it affects the conditions imposed on subsidies, especially the need for a guarantee of training quality. The Dutch representatives, in particular, expressed the fear that in a subsidized system, the companies would not assume their responsibilities and would only accept young people in order to obtain the subsidies.

This issue can in turn affect the remuneration of apprentices. In some countries, apprentices enjoy a double status whereby they are only considered as employees when they are in the company. Their pay is lower than that of the regular employees, but the differential varies greatly from one country to another. In determining their pay two pitfalls must be avoided: on the one hand, the exploitation of cheap labour, and on the other, costs that dissuade the company and are thus ultimately detrimental to the young people since they will not be taken on as apprentices. Reduced pay should also provide an incentive for apprentices to complete their training successfully.

It could also be argued that it is in young people's long-term interest to participate in a high-quality training programme with low pay rather than being better paid for work that provides no training. Short-term trainees, on the other hand, should only be paid when they perform productive work.

Finally, the relationship between problems of financing training and certifying it must also be noted. Indeed, "the production of occupational skills attested by a certificate and thus transferable is closely tied to the question of who should assume the costs of the training" (Marsden, 1993; Buechtemann *et al.*, 1993).

8. Evaluation and certification

According to the different forms of training, two distinct problems may be identified:

- in a dual-type system, where training takes place in both company and school, there is a double problem of guaranteeing the quality of the training acquired in the company and validating the entire programme, either for further studies or for the recognition of the qualification acquired in relation to the labour market. This in turn raises the question of the relevant authority and the procedures. (The problems of certification are analysed in a forthcoming OECD publication.) The discussion that follows is restricted to the specific context of a training system involving school and company;
- in a school-based system, the process basically consists of evaluating the training acquired during the period in the company and possibly taking this evaluation into account for the final certification.

Certifying authorities

The seminar participants were of the opinion that while the implementation of alternating training should be broadly decentralised, the certifying authority should remain national rather than regional or local; otherwise, the qualification acquired is not transferable from one region, province or state to another.

The question was even raised as to whether certification should not be defined on the European level (for the members of the European Union). In Denmark, for example, there is an attempt to develop a training programme that goes beyond borders, which implies recognition of prior experience. While most of the participants expressed a preference for a formalised national system of certification, there were nonetheless fears that formal recognition would not be of great use in the countries of southern Europe, and might contribute to bureaucratisation. Following Lutz's presentation, which emphasized the specificity of the intermediate skills to be acquired through alternance and that of the occupational labour markets which are supposed to recognise them, the author suggested an analogy with the peer recognition that plays an important role in the medical and legal professions amongst others. In his view, only peers would be capable of legitimately evaluating competences that cannot be objectively tested, such as those which he defined for the new-skilled industrial workers and technicians: "People become doctors not because they have passed examinations but because they are recognised and received by their peers."

This solution was not accepted by everyone however, at least not as the only one. In France, state intervention is generally held to be indispensable, although this does not prevent peers from being associated with the evaluation. But can peer-group recognition as applied to the professions be transferred to skilled workers? In any case, the real problem is the need to remain close to the occupational reality while guaranteeing an objectivity that cannot come from the immediate superiors of the person evaluated (especially when this is an adult employee). This is one of the controversial aspects of the National Vocational Qualifications (NVQ) experience in the United Kingdom, with the risk that the excessive pressure of direct supervision could lower the level of requirements.

Finally, it should be noted that the problem of the certifying authority is closely tied to those of recognition on the labour market and the role of the actors already discussed above. Indeed, the involvement of the greatest possible number of actors in the definition of certification principles and their implementation (as in Germany) is the best guarantee of recognition on the labour market.

When certification is not the prerogative of the State (as in France), employers are free to take it into account or not. This depends on whether the collective agreements classifying jobs and defining remuneration make the diploma a criterion for qualification. The interpretation of these agreements also depends on the balance of power between employers and employees in each activity sector or company.

Certification procedures

One question raised by an apprenticeship-type training system is that of the recognition of their proper value and the evaluation of "non-objectifiable knowledge", which includes the ability to confront complex, varied and unpredictable situations. Such an ability is increasingly demanded by the companies and cannot be developed exclusively in school. Is it compatible with the need to give certification an objective and adequately standardised character?

Lutz's proposal for peer evaluation may offer a process suited to this kind of problem. In fact, the composition of examination juries is often mixed, including both teachers and practitioners, regardless of the authority that has final responsibility for certification.

As already indicated, taking into account elements other than knowledge and general abilities may or may not be compatible with the often expressed desire to give alternating training diploma holders greater access to higher education, where the forms of evaluation are for the most part radically different. This problem has given rise to the suggestion of two distinct kinds of validation, which would then have to be accepted by the university. A related question is that of the connection between the evaluation of acquired experience in the two systems. The German solution consists of separate evaluation and certification of the two components, the more important of which corresponds to the training acquired in the company.

Evaluation of training placements

Where short-term training placements in the company are concerned, the problem is less that of certification (which remains the responsibility of the school) than that of the evaluation of the experience acquired and its relative weight in the overall evaluation,

Box 11

The Belgian presentation included an analysis of the way to evaluate the in-company training that takes place in the context of school-based training. "Assessment is carried out jointly by the teacher in charge of training and the tutor (...). Interim tests prepared jointly by the teacher and the tutor keep students informed of their progress and provide a means of determining when specific remedial or further training is needed. When the training is finished, the teacher and the tutor decide together whether the student has acquired all the skills covered by the frame of reference or only some of them."

given that the importance of any element of training is largely a function of the importance attached to its evaluation (Box 11).

9. Dead ends or highways to the future?

If the discussions of the seminar had to be quickly summed up, and at the risk of being schematic, it would be tempting to say that participants went from an initial ambiguity (about the very notion of alternating training) to a series of conclusions that could appear paradoxical:

- there is a large consensus on the interest and advantages of alternating training;
- analysis shows that its implementation requires a group of conditions presupposing a comprehensive, systematic approach;
- in the few countries where these conditions are present, the systems themselves are today in danger.

The explanation of this seeming paradox may lie precisely in the fact that the consensus exists mainly around the pedagogical function of alternating training, while its broader implications are not always taken into account. In fact, there are three kinds of approaches that use alternance as a pedagogical tool: vocational training based mainly on apprenticeship, that which takes place within a school environment and the training placements aimed at young people in difficulty. They cannot be reduced to a single concept: they correspond to different expectations and goals; the conditions of their application and the price to be paid are not the same. It is not certain that all the countries and actors involved are conscious of this, or that they are prepared to assume all the consequences of a systematic approach, in terms that are not only financial but also institutional and social: linkage with the education system and the labour market, social dialogue. This observation sheds a different light on the future of alternating training as a system, which basically means the dual system, and on the prospects for pedagogical improvements based on alternance.

With regard to the dual system, the threat does not really come from its supposed rigidity or unsuitability to new economic requirements, as it has already demonstrated its flexibility and the ability to adapt. Rather, it is the combination of pressure from young people for continued studies and the tendency of one portion of the companies to reinforce this rationale, coupled with their hesitations about the financial expenditure that the system represents for them.

The risk has been cited of company efforts to economise on training (''lean training'' after ''lean production''), by counting instead on a higher level of a general training financed by the State. This would bring the countries of the dual system closer to the situation in Japan and the United States. The Swiss report in Part II evokes the prospect of a period of decline for apprenticeship training until the resulting impasses would become obvious to the public authorities (budget deficits), the companies (loss of skills) and individual employees (frustrations about the level of tasks to be carried out relative to a higher level of studies). At that point it would be necessary to envision a recasting of the system involving both the education system and the company as training sites.

However, in these countries, none of the partners (employer and union organisations and public authorities) seeks to call the system into question; on the contrary, the policies adopted aim at consolidating and adapting it. But it is ultimately the companies' attitudes and practices, in relation not only to training but also to employment, recruitment and career paths, that may well be decisive. In those countries seeking to develop school-based alternating training, the question is rather whether the in-company training component will receive adequate weight, thus giving real content to the notion of alternance. This would require, first of all, finding enough companies to participate in this kind of programme, and thus being able to motivate them, and also having the education system attribute sufficient importance to the in-company training component alongside the academic one.

At present, the two approaches are still very separate, in terms of both the partners' commitment to a comprehensive system and the role that workforce management practices and the goal of labour-market entry play within it. The distance is even greater with countries which are still at an experimental stage in which alternance is no more than a pedagogical tool.

The development of mixed formats combining a renewal and extension of apprenticeship with school-based alternating training could lead to convergence. But in order for these desires to be fulfilled, there must be a minimum of institutional structure, organisation and collective responsibility. Otherwise, alternance may well remain a mere gadget covering up the absence of any real link between school and company or simply be used as a source of cheap labour.

In any case, all of the countries, regardless of the approach they take, seem to be equally confronted by two major difficulties: motivating young people to enter the vocational streams and motivating the companies to accept them. In both instances, the solution goes far beyond simple reconversions of the training system and requires the calling into question of much broader issues.

Where the third form of alternating training is concerned, namely, internships for young people in difficulty, the very significance of their development and their function in relation to that of the educational system are today open to question. In fact, it might be asked whether the real problem is not rather the adaptation of the educational system to the new challenge posed by an economy that only offers places to the most effective producers and encourages the exclusion of the others.

The seminar helped to bring out the need for a more comprehensive, systemic approach to the questions raised by alternating training, which are not limited to a strictly pedagogical or economic perspective. This approach presumes a more intensive dialogue between two worlds that until now have all too little knowledge of one another, that of production and that of training.

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Part II

COUNTRY STUDIES

BELGIUM

(the French community)

From the Socio-economic Context to the Needs of School-based Training

prepared by the National authorities

1. The issues to be addressed

Under what conditions could alternating classroom and workplace training help to attain the training objectives of OECD Member countries? Conversely, could the training objectives be attained without recourse to alternating training and, if so, how? These questions will be addressed in the following themes:

1. Linkages between education and employment: what will be the role of apprenticeship and "alternance"?
2. The mediation between general and vocational education and training.
3. Pedagogical objectives and the organisation of "alternance".

Linkages between education and employment: what will be the role of apprenticeship and "alternance"?

The system in French-speaking Belgium consists of three streams: general education, technical studies and vocational training.

In comparison with Germany, for example, the situation in French-speaking Belgium is as follows:

- individual alternating training programmes have been carried out in the textiles and catering sectors among others;
- for a number of years now, collective agreements have provided a means of organising alternating training courses in the "vocational" stream for occupations in the catering and family service sectors;
- since September 1993, all sectors in the "vocational" training stream have been allowed to take training courses in enterprises.

Practical vocational training is obtained by means of:

- workshop activities (in schools) where technical skills and appropriate behaviour are learnt;
- training courses (outside school) one day every two weeks, or set periods over several consecutive years during or outside the school year for the purpose of applying and transferring school-based training, and specific training sessions with equipment not available at the school.

The students derive specific benefits from training outside school, such as:

- personal development through contact with the adult world and the enterprise which can have a positive psychological impact on the adolescent;
- scope for finding role models;
- adaptability to new situations;
- skill transferability, *i.e.* the ability to apply the concepts learned in the classroom.

Skill transferability is a so-called horizontal ability of the utmost importance and is the cornerstone of successful training. Working in a real-life environment can make it easier for young people to master this skill which will later help them to adjust to working in an enterprise and to adapt to the changing demands of their jobs. Enterprises tend to recruit the best students during training periods.

The mediation between general and vocational education and training

The reform under way in Belgium in "vocational" training seeks to strengthen general education and award a "vocational" diploma at the end of the third grade (at approximately 18 years of age). This reform will likely make it easier for school leavers to find jobs. Enterprises (whatever their specialisation) are looking for broadly skilled and adaptable workers who take pride in their work, are capable of taking initiative and can integrate well into the company. The combination of a higher educational level with the mastery of credible "vocational" skills should be well suited to meeting these needs.

Students' weekly schedules are becoming shorter. The reduction primarily affects vocational skills courses, which means that there is a relative increase in the proportion of general education courses. While "vocational" training provides students with up-to-date technical skills, general education makes it possible to develop the qualities of adaptability and initiative that will be necessary later on.

Pedagogical objectives and the organisation of "alternance"

Continuity between learning at school and in the workplace is essential. The training programmes in enterprises should meet specific criteria of pedagogical organisation, and the teacher in charge of the training programmes should ensure that they are carefully prepared and assessed.

The teacher works in co-operation with the "tutor", a staff member of the enterprise who is "responsible" for the students at the workplace. On the basis of criteria set beforehand, the programme is continuously assessed. Students are also asked to evaluate the effectiveness of the training they receive. Once the training programme is completed, a final assessment is made to sum up the overall situation.

The tutors play a key role in ensuring the success of the training programme, and its effectiveness will largely be determined by how thorough their preparation has been. When a school is well integrated into the socio-economic fabric of a region, it is much easier for the company "tutor" and the teacher in charge of the training programme to understand each other and to work together effectively. Attention may be drawn to the key role of the tutor in the context of the school's teaching plans.

2. Alternating classroom and workplace training in vocational and technical education and training

Compulsory schooling ends at the age of 18, but at 16 students can either continue their education on a full-time basis in school or choose vocational training which alternates between school and another training partner. Each year in French-speaking Belgium nearly 40 000 young people leave secondary school without receiving their school-leaving certificate.

Learning at school and in the workplace

On the strength of initiatives by both schools and enterprises, alternating classroom and workplace training programmes have been available in the third grade of full-time technical and vocational secondary education since 1st September 1993.

Supervision by schools: under the Charter on alternating classroom and workplace training, schools continue to be responsible for the organisation, supervision and certification of such training, while accepting that the students involved have different timetables. The enterprise should place young people – who retain their student status – in real work situations, and it should undertake to provide well-qualified tutors and train the teachers.

In alternating classroom and workplace training, learning (as initial training) tends to be a continuous process, for the school and the enterprise co-operate in teaching students an occupation. The system is based on the assumption that the formal learning site (the school) and the practical learning site (the enterprise) are complementary. This system, whereby a single learning process takes place at two different sites (school and enterprise), means that time must be set aside for the educational application of what students have learned in both environments and for the discussion of the specific and even contradictory aspects of both sites. Accordingly, it is essential to have the clearest possible picture of what can be learned at each site, their respective limitations and the conditions for using their potential to the full. The two have to reach agreement on the objectives of the training, on the means of attaining them and on the tasks to be accomplished at each site.

- The school retains responsibility for certification and continues to provide the basic general education, humanities and social science classes, and technical and practical training.
- The enterprise must provide real work situations and appoint tutors who have the ability to train young people.
- Together, the school and enterprise have to ensure ongoing consultation in order to decide what specific work is to be assigned to young people; define the objectives and the ways and means of attaining them; co-ordinate the time spent in school and in the enterprise; monitor students' progress.

Together the teacher and the tutor must establish a frame of reference for all the skills involved.

Choosing an enterprise: the significance of the enterprise's size

The level of technical knowledge that students can attain during a training programme in an enterprise is to some extent dependent on the kind of enterprise and the work that they are assigned. From this standpoint, there is generally a difference between small and large-scale production, since large companies more often use new technologies and the most modern equipment. They can often "rotate" trainees among several departments and familiarise them with a range of processes.

Small- and medium-sized enterprises often concentrate on a specific type of production. The techniques, processes and equipment available to trainees are often limited. Nevertheless, SMEs are currently the largest providers of training programmes. An agreement was recently signed between the Minister of Education of the French Community of Belgium, the Walloon Business Union (*Union Wallonne des Entreprises*, UWE) and the Brussels Business Union (*Union Bruxelloise des Entreprises*, UBE).

The process of giving a formal structure to what has been learned from the work experience is now considered essential to the teaching programme. Without it, it is impossible to see what benefits trainees are going to derive from their immersion in the work environment. Moreover, such a structure is a prerequisite for transferring the newly acquired knowledge and know-how to other work situations other than those encountered during the courses.

The scheduling of alternating training

The impact on trainees will differ according to how the course periods are arranged.

With two days per week in the enterprise and three days at school the student cannot become completely "familiar" with the enterprise. A great deal goes on while trainees are not there. Moreover, they will not experience what it is like to work for a full week or over a production cycle.

Training that schedules workplace sessions over several consecutive weeks caters more effectively for specific requirements in the learning process. During this time, the trainees begin to feel that they are workers in the enterprise and they can experience the pace of work, work cycles, fatigue, and what is involved in starting up and ending processes. However, students often do not relate well to school after a lengthy absence. It is very difficult, moreover, to make use of the workplace experience in the school-based learning context.

Motivating enterprises

Alternating training provides enterprises with an opportunity to test young people and give future workers some experience of life within an enterprise.

It also offers managers a means of shaping the content of training programmes so that they do more to accommodate new techniques and new forms of work organisation; it also enables managers to discuss their manpower needs.

The agreement on alternating training in full-time secondary education (cf. Charter on alternating classroom/workplace training)

This convention defines the relations between the three partners and establishes the legal framework and formal rules governing these relations.

More particularly, it specifies:

- the site of the alternating training and the sector of activity;
- the starting and ending dates of training;
- the obligation of the parties to adhere to the terms of the training agreement and to do all they can to ensure that it is carried out;
- the name of the individual(s) authorised to supervise the trainees at the workplace;
- the trainee's status;
- the trainee's obligation to comply with work and safety rules;
- additional information.

The agreement is signed by the student (or by the parent or guardian if the student is a minor), by the school's administrator and by the management of the enterprise.

Supervising the training process

If young people are to be sufficiently motivated to pursue alternating training, it must provide effective continuity between learning at school and in the workplace, continuity that does not exist in its own right and is not created by the student-trainee since it must be based on objectives and plans which are clearly defined by the school and the enterprise. It must be designed and supervised by teachers and trainers.

The programme comprises three major phases (*cf.* the Charter on alternating classroom/workplace training):

1. the preparatory phase;
2. learning in a real work environment;
3. final assessment (see box).

Trainees are asked to keep a log of their training programme which enables tutors and teachers in charge of programmes to monitor their progress; classtime must be scheduled for the educational application of what was learned at the workplace.

Each partner – the enterprise, the school and the pupil – must have a copy of the frame of reference, *i.e.* specifications relating to the skills to be acquired during the workplace training. The assessment procedures must be determined (the criteria and the methods of assessment will be included in the frame of reference and will be made available to students before the workplace training begins).

Tutors: the tutor is a worker within the enterprise who is specially appointed to look after a trainee. In a small enterprise, it is often the owner.

The tutor's task is to teach the trainee all of the material covered by the programme – following the timetable set in co-operation with the school and to be the trainee's primary contact within the company. Tutors should be chosen on the basis of three equally important criteria:

- professional skills;
- motivation;
- ability to relate with and teach students effectively.

It is important that the tutor be adequately informed of the objectives. These can only be attained if they have been clearly formulated so that they can be discussed, agreed upon, co-ordinated and assessed, a formulation that gives us the frame of reference. This tool, which is a common reference document for tutors, teachers and trainees, consists of a detailed list of the skills to be acquired during workplace training.

The agreement: this is the contract which binds the alternating training partners; it specifies that each of the three parties has a moral commitment to contribute, according to its means, towards ensuring the success of the training.

The frame of reference describes all aspects of school/enterprise relations and sets out the terms of the training agreement between them. Its preparation requires that the "school" be adequately informed about the current state of the art in a given trade. What tasks does the trade involve? What techniques are used? What are the prerequisites? What knowledge and what skills does it require?

This information can be found in monographs and descriptions of trades, but the assistance of professional associations is necessary.

Assessment is carried out jointly by the teacher in charge of training and the tutor on the basis of the assessment form (see annex). Those concerned decide the stages at which it is most appropriate to use this form. Interim tests prepared jointly by the teacher and the tutor keep students informed of their progress and provide a means of determining when specific remedial or further training is needed. When the training is finished, the teacher and the tutor decide together whether the student has acquired all the skills covered by the frame of reference or only some of them. The assessment may also benefit from practices prevailing in the federations for particular sectors (training log, students' records: threshold for entering workplace training, or action plans).

1. The preparatory phase

Objectives: to enable students to meet the prerequisites for entering an alternating training programme.

To inform students of:

- Activities
- Organisation
- Safety instructions

To make pupils aware of:

- Demands of programme
- Constraints

To inform pupils of:

- Specific goals
- Skills to be acquired
- Assessment criteria and methods
- Organisation

Training assessment, remedial training ⟶ Pupil's actual level when starting workplace training

Methodology: partnership based on:

- Case studies
- Work in groups
- Analysing and solving problem situations
- Laboratory experiments

Duration: from 6 to 8 weeks.

2. Alternating training

Objectives: to enable the trainees to be recognised as qualified to take up an occupation

Adhere to the principles of the Charter:

- ongoing assessment of training
- monitoring of:
  - skills
  - potential
  - behaviour
  - attitude towards work
  - quality of work
- based on students' work:
  - schedule for remedial training
  - further training

Assessment ⟶ student assessment form, training log, action plan, frame of reference.

(continued on next page)

(continued)

3. Final assessment

To assess the experience:

- assessment reports
- student assessment forms
- questionnaires completed by students

Assessment: certification/validation

Board of examiners

Recognition of aptitude to take up an occupation

Criteria: knowledge, know-how

- method, quality, independence ⟶ work
  Record of tests ⟶ level.

According to one company, Fabrimetal Hainaut-Namur: "the threshold for entering workplace training corresponds to the skills required to be accepted for training in an enterprise". Each candidate's level should be assessed at the beginning of the programme. Deficiencies can then be made up during a levelling-off phase. Each student's profile should then be reappraised before the workplace training starts. Individual results enable the teacher in charge of training to place each student in an enterprise or, if necessary, postpone the start of the course so that the candidate can subsequently be more adaptable in the training.

3. Conclusion

"Teachers were isolated from the outside world. Now each teacher talks with managers and visits students at the workplace. The teacher too has on-the-job training. This experience also changes managers' attitudes towards the education system. While they often have a negative or condescending view of it, they have now become aware of the difficulties involved" (in *Alternating Classroom/Workplace Learning, Ten Conditions for Success*, Directorate-General for the Organisation of Education of the Ministry of Education and Scientific Research, April 1992).

STUDENT ASSESSMENT FORM

School: ....

....

....

Company: ....

....

....

Student's surname and first name: ....

....

Year of study: ....

....

Orientation: sector ....
group ....
basic option ....
Grade and year ....

Dates of training in the company: ....
Beginning ....
End ....

Total hours in the company: ....

Overall tasks performed: ....

....

....

....

....

....

....

ASSESSMENT FORM

Common core	Evaluation			
Personal qualities	VG	G	S	U
Is punctual				
Is careful, precise and attentive in performing tasks				
Is able to communicate with others				
Shows basic courtesy and good manners				
Accepts responsibility				
Can cope with difficulties				
Is helpful				
Is dynamic				
Takes initiative/shows independence				
Attitude				
Is motivated by training/takes an interest in work to be done				
Listens to others and accepts criticism				
Works well in a group				
Can cope with new situations				
Occupational aptitude				
Obeys rules of hygiene and safety				
Understands, and complies with rules				
Uses the vocabulary specific to the occupation				
Uses equipment rationally				
Has a methodological approach to work				
Carries out tasks efficiently				
Treats the workplace and equipment with respect				

FINLAND

Open Skills, Open Knowledge

by

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1. Apprenticeship training in Finland

In Finland, as in most countries, apprenticeship training goes back to the days of the guild system. In handicrafts, journeymen and apprentices learned their skills under the guidance of masters. The guild system disappeared in 1868, but the training of labour for handicrafts often continued to take place under the supervision of an experienced craftsman.

The first law on apprenticeship training was passed in 1923. The law mainly concerned trades for which training had already been arranged. Nevertheless, the law was expected to influence industrial training as well. At the time there was little training for industrial fields in Finland.

It was not until the end of the 1960s that apprenticeship training was restructured by a new law. Theoretical education became a systematic part of apprenticeship training. At the same time, local administration of apprenticeships was extended to all municipalities.

At the beginning of the century, a legislative reform of apprenticeship training was undertaken. A law on apprenticeship training was eventually enacted and came into force at the beginning of 1993. The primary aim of this new law is to strengthen the status of apprenticeship training as a work-intensive alternative for training at school. Economic factors also reinforced the status of apprenticeship training. In recent years it has been necessary to cut educational costs considerably. Various forms of on-the-job training are less expensive than training given at school. Thus resources for training at school have been reduced.

In Finland, vocational training is based on training given at an educational institution. The development of apprenticeship training and on-the-job training have a somewhat marginal status. About 95 per cent of the students aiming to acquire professional qualifications study in some type of educational institution. An essential part of the education is the teaching of practical skills which takes place at a school that uses its own machines and equipment. In all vocational fields, training also includes work placements varying in length from one to twelve months.

The educational institutions produce trained labour with a relatively solid and wide theoretical basis in various fields, but the skills needed in practical tasks are more limited. Therefore, one of the aims of education policy during the past years has been to strengthen the status of on-the-job training in Finnish vocational education. This has been done by increasing training places and by developing the apprenticeship system.

The main principle of the Finnish education system is equality in education. Everybody must have the same opportunities of education irrespective of financial means, place of residence, social background, sex and origin. The system has been built on the principle of open educational channels in order to guarantee everybody the opportunity to continue studies from basic education through to higher education. The significance of theoretical studies in acquiring qualifications for further studies is emphasized. Apprenticeship training has not only provided a channel for small vocational fields but also an alternative for those who do not want to acquire vocational skills by going to school.

Depending on the field, 70-80 per cent of apprenticeship training consists of on-the-job training. Local authorities buy theoretical education from a vocational institution, adult vocational education centre or, if necessary, from some other provider of education. For each student, a personal study programme is drawn up in co-operation with the employer, local authorities and the student him/herself. The student's previous studies and work experience are taken into account.

The wages of an apprentice are defined according to collective agreements, and represent a percentage of the minimum wages of each field. For students under 18 years of age, the wages are 50-70 per cent of the minimum wages, and 70-90 per cent for 18-24-year-olds.

In apprenticeship training, learning is evaluated by the employer, the provider of the theoretical education and a representative of the local authorities. The latter also gives a general mark relating to the student's certification.

This past year, the labour and education administrations, together with workers' organisations, have started an important campaign to promote apprenticeship training in Finland. Workers' organisations, in particular, have long emphasized the significance of apprenticeship training as an alternative to acquire up-to-date qualifications. In the Finnish workplace, a culture has not yet emerged, as in the centre of Europe, in which apprentices are an essential part of everyday working life. Employers have gotten used to the system in which the public authorities take full responsibility for the costs of vocational education. Currently, there is difficulty finding suitable employment even for short training placements.

The trend is to increase on-the-job practice as an alternative for training at school. In recent years, the share of time spent on a training placement has increased in all fields, as it is not possible for all educational institutions to acquire the most modern equipment for teaching purposes. However, in the workplace, students can see the way a company operates and use the most up-to-date working methods and equipment.

The development of apprenticeship training in Finland has faced at least four obstacles:

1. How are the costs of vocational education divided between the public authorities and enterprises?
2. Does apprenticeship training tie the student too closely to a specific enterprise?
3. What is the relation between theoretical education and practical training?
4. Is it possible to learn everything essential to the qualification through on-the-job training, and what is the part that cannot be learned effectively in school?

The following sections concentrate mainly on the last two issues.

2. Open skills, open knowledge

The functions of the upper level of secondary school and vocational schools are perhaps best distinguished by their relations to knowledge and skills. The upper secondary schools base their work on texts, which were, initially at least in Finland, seminars for priests. The commitment to texts and the world view perceived through them shows well the nature of the upper secondary school. Presently, however, instead of the writings of the Church, work is based on scientific texts rather than on church writings, and the upper secondary schools try to instill a scientific world view in the minds of their students. However, this knowledge is already static, not to say locked – in other words, it is information whose origin and procurement is hidden. The knowledge is usually given to students ready to be adopted and memorised; this is not sufficient.

Information, which is increasing in volume and diversity, is more and more influenced by the methods of acquiring and processing knowledge. Subject matter as well as fields of study are changing in the learning situation. The teaching of different subjects must provide more tools for acquiring and processing information, tools for understanding everyday phenomena and not only texts to be memorised. This tendency emphasizes the open nature of knowledge. Different methods produce different kinds of knowledge.

The starting point in vocational schools or institutes is the skill with the help of which the object of work can be controlled, prepared and manipulated. The concept of workmanship has evolved from a product (*e.g.* by a shoemaker, tailor, or watchmaker) into tools and methods (*e.g.* by a mason/bricklayer, carpenter, welder, mechanic). The development of workmanship was most restricted during the era of the "scientific organisation of work" when an attempt was made to eliminate the open nature of tools and methods, or to close it rigidly into the mould of productivity.

Later on, mastering the method took more and more technical literacy as well as social literacy and a sense of judgement. The skills become more open: the routines of a skilled worker are just a small part of his workmanship.

Upper secondary schools are oriented to teaching knowledge while vocational schools focus on teaching skills. Even though their basic orientation differs, they share a common approach to knowledge and skills. Vocational schools are inclined to teach closed skills and routines. The instructor shows how to do something, then the students imitate, practice and finally do it themselves. Nevertheless, the origin and development of that skill – both individually and historically – remain hidden and devoid of significance. The same pattern occurs in the upper secondary schools: ready-made knowledge is passed from someone who knows to someone who does not know.

3. The work in the curriculum

Kiiskinen and Lehtivaara studied the teaching practices of Finnish vocational schools a few years ago. An examination of their findings reveals that the vocational schools now base their teaching on three models of working.

1. *Taylorist labour* – Teaching is traditional, as at school, where "the teacher has a lot to teach, show and advise, a lot of planning, organising and supervising the work (...). The students have little independence and freedom to plan and choose their work and their learning tasks (...). The product of this kind of action will be replicable, repeating skills that can only be used in situations that are similar to the situation where they were learned".
2. *Fordist labour* – Education is based on the teacher's role as a foreman/supervisor of work. The teacher also organises the work, even though "the role has a few features of the teaching function as well as the educational function of teaching. The teacher divides, supervises and controls the work. The students have more responsibility and independence in using and interpreting teaching materials, for instance. As a result of this kind of teaching practice, students learn basic skills that they can use in different situations and variations of that skill".
3. *Accountable for productivity but craftsman-like work* – The teacher is the student's personal adviser and tutor. Teaching emphasizes self-direction, readiness to set learning goals, the right to choose one's own tasks and exercises and how to do them. Teaching materials are used purposefully as source materials. "The goal is to learn the basic requirements of that occupation taking the different aspects of one's personality into consideration (...). This action will produce an extensive basis for workmanship that can be seen in conceptual control of the action, in individual tasks and in the skills of planning, adapting and solving problems".

According to the above models, Ekola and Rantanen (1988) have classified teachers as "school masters", "master teachers" and "learning-centred teachers".

4. The study plan and work plan

Different things are learned in school and at work. In the production process, the product is the denominator and the worker is the numerator. The student is the denominator and the product is the numerator in the learning process. Consequently, study units and work units or tasks do not quite correspond with each other. Their structural logic is different.

The interrelation between the school programme and the work programme is thus very interesting: they both try to say something about the other that they cannot express about themselves.

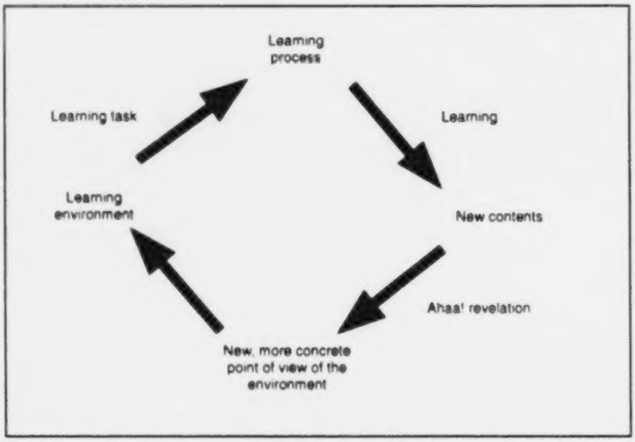
5. The open learning situation

It is not only what and how we learn that is important; where learning occurs plays an essential role in learning. This idea has recently influenced the way in which the school curriculum is elaborated.

In this case, the roles of the teacher and the student should change significantly. The student should be more and more responsible for the organisation of his studies and learning. The teacher should be responsible for planning the learning environment and guiding and assessing the learning processes.

The student is thus regarded as a processor, who, working in an environment he has chosen himself and doing the given tasks, learns much more than just how to perform the task. He will learn the contents of the education from the environment in which he is working. For example, in the learning of a language, in addition to the vocabulary language structure, and contents of a text, the environment in which the task is performed, its structures and relations also influence the learning process (Figure 1).

Figure 1. **Examples of the phases of the learning process**


Learning process
Learning task
Learning
Learning environment
New contents
Ahaa! revelation
New, more concrete point of view of the environment

The content, the substance, have traditionally signified something that is stable. The content has always had a specific structure without which it probably could not be expressed. Similarly, the structure always expresses content. By emphasizing the learning processes rather than the contents, the teacher and the student will face a new situation.

Studying will no longer consist of imitating but will become a student-centred and creative process. The student will create something himself by understanding his working environment with the help of a method (investigating, working, adapting etc.). His capacity to put action into context, his social literacy and his sense of judgement will develop as well.

This way of thinking will require a reconsideration of the learning situation. It will have to become more open. The basic parameters of the learning situation – time, place, content – can be left mainly for the student to control. The student himself should increasingly answer the questions where, when, what and how.

The transition to a pedagogy centred on the process will naturally question the existing division of subjects. Its role will change: the division into different subjects, or into different fields of study, will no longer express the contents of studies but the methods – through which the contents are discovered, seen or understood in the environment – will express the contents. The meaningful contents of studies will be in the environment, not in books, if only the student can understand it. The methods of acquiring knowledge and skills open up different environments. The method will convey the content.

Emphasis needs to be put on setting pedagogical tasks that constitute student activity. The learning cycle will consist of different circles that could be characterised as follows: anticipation; constructing the learning task; processing – summarising; assessing. Analysing and organising the time, place and content will have very different functions in the actions of the teacher and the student.

6. Study in training – training to work

Education after primary school is, in many respects, something "in between". It lies between childhood and adulthood, between school and work, between basic education and higher education. Upper secondary education for adolescents struggles constantly between integration and specialisation/disintegration in order to meet contradictory expectations.

In discussions about developing new models for upper secondary education for adolescents, there seem to be two opposing tendencies that clearly indicate the different views in the perception of the problems:

Work and training scheduling

The first task is to decide whether to approach the elaboration of education from the viewpoint of the working organisation or of the curriculum. The former will lead to emphasizing the practical aspects of the education – putting together the time, place, and teachers and students with their respective needs and goals.

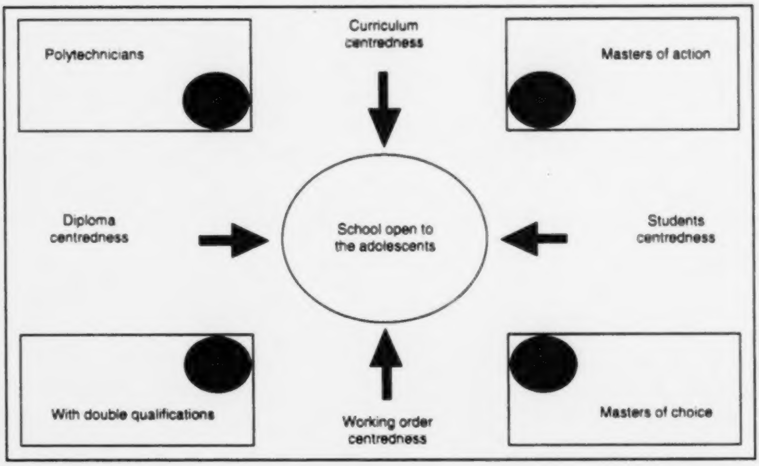
A focus on the curriculum leads to integrative, content-based discussions about developing study forms and methods. The working organisation is used to realise these forms and methods. Linking the time, the place, the content, and the teachers and students will be mainly seen as a pedagogical issue. The most important issue is to develop, with the students, an environment that facilitates the educational goals.

7. Diplomas and students

Another central issue can be illustrated by the opposition between a concentration on diplomas or students. Focusing on diplomas emphasizes the need to harmonize existing diplomas, in other words, to make them compatible so that students can study for two different diplomas at the same time. The student-centred approach underlines the student's choices. Planning an individual study programme and being responsible for one's own studies is seen as an important pedagogical means of becoming independent.

These two points of view are, of course, only the opposite ends of a continuum with a lot of variation in between. However, within this polarisation, there are four ideal models (see Figure 2).

Figure 2. **Ideal models for developing the upper secondary education for adolescents**


Polytechnicians
Curriculum centredness
Masters of action
Diploma centredness
School open to the adolescents
Students centredness
With double qualifications
Working order centredness
Masters of choice

Students with double qualifications, vocational undergraduates (or academically oriented vocational school students) with two diplomas, are students who, in addition to the Matriculation Examination, obtain one of the existing vocational diplomas. That does not leave them much freedom in their choices because they have to fulfil the existing diploma requirements.

Masters of choice students are those whose studies are mainly based on their own choices. Vocational orientation is initially quite general, becoming gradually more specific over the programme of studies. On the other hand, however, the modules to choose are specified in time, place, and content. Freedom of choice means freedom to choose between different study modules or units.

Polytechnical students are vocationally oriented undergraduates who want to integrate both vocational and general education into one diploma. The freedom of choice is very limited. This model calls for thorough curricular development in order to integrate theory and secondary school mathematics with applications of technical studies, for instance.

Masters of action are students who have had an opportunity to work in a fairly open learning environment where they have been able to control the timing, place and contents of their studies themselves. The contents are brought out of the environment by using different working methods corresponding to different subjects or disciplines. Workmanship is regarded as a means to solve central problems rather than as a ready-made situation in working life.

8. Apprenticeship training and learning

What conclusions can be drawn from the above analysis to develop apprenticeship training?

a) Students learn different things in school and at work. These learning environments do not follow the same basic logic, and they do not refer to each other. Both learning environments are needed.

b) Whether the learning environment is a school or enterprise, the way in which learning tasks are set is decisive. School and the enterprise permit one to learn skills and knowledge from other stand points. Mastering open and often complex tasks under the pressure of time and quality requirements is very difficult to acquire at school. On the other hand, it is relatively difficult to learn required knowledge and know-how in the work process.

c) Practical learning is not, firstly, learning visible and already crystallised – that is closed – skills and knowledge but learning to contextualise the practice, learning to read the theoretical and social basis of the practice.

d) Learning to master open and complex work situations implies that such situations exist at the moment of learning. Both schools and work places seem – consciously and unconsciously – to prevent the occurrence of learning situations like this. But without them, skilled craftsmen cannot be shaped or a culture developed through occupations.

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FRANCE

Alternance in Initial Vocational Education and Training

by

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1. Introduction

Vocational education and training systems can be classified according to various criteria:

- the proximity of training site and workplace, which can be combined, partly separated or totally distinct;
- the placement of general training, which can precede any vocational education and training or partly coincide with it as a more or less important component;
- responsibility, which can be retained by the companies, shared or exercised by autonomous organisations or the education system, with or without specific schools.

In France, the dominant system presents the following features:

- training sites and workplaces are basically distinct, albeit with relatively brief periods of training in the company;
- there is significant general training within vocational education and training (in terms of scheduling and examinations alike);
- training programmes belong to the education system, with specific institutions, at least for skilled worker training programmes.

There is also an apprenticeship system, however, which is much smaller in terms of numbers. Here, the training site is partly combined with the workplace: general training thus takes up less time, and responsibility lies mainly with the companies, in conjunction with a training centre.

In addition, alternating training mechanisms have recently been created in between initial and further training. These mechanisms are aimed at improving access to jobs among the unemployed, and particularly those who have never worked before.

After examining the general structure of the French education system and the changes it has undergone since the beginning of the 1980s, we shall consider the role of the companies in the various forms of training and then conclude with several observations on the transition to working life.

2. The French education system and its evolution

General structure

In the French education system, four levels can be distinguished:

- nursery school (*école maternelle*), which precedes compulsory education, and elementary school (*école élémentaire*), up to the age of eleven;
- middle school *(collège)*, which all children are required to enter for four years of compulsory secondary education, known as the sixth, fifth, fourth and third grades (the French count backwards!). However, there are still traces of the previous arrangement, where certain students left the *collège* after the first two years (fifth form);
- high school (*lycée*), where 90 per cent of middle-school students continue their studies in the various curricula (general, technical, vocational);
- higher education (*enseignement supérieur*), which currently receives 45 per cent of a given age group (this percentage is rising).

In addition, outside the education system per se, there is an apprenticeship system where work in a company alternates with training in an Apprentice Training Centre (*Centre de Formation d'Apprentis*, or CFA), which is most often run by a company-related organisation. The apprentices (about 8 per cent of a given age group) generally enter the system after middle school, but apprenticeship is beginning to develop at the higher levels. The CFAs may also offer preparatory classes for apprenticeship; these recruit at the middle-school level but account for less than 3 per cent of their enrolment.

Students who remain in the education system enter a high school, which may be of two kinds:

- Vocational high school (*lycée professionnel*) leading to a vocational diploma in the industrial or tertiary sector. After two years of study, there is a skilled worker's diploma, either the traditional Vocational Aptitude Certificate (*Certificat d'Aptitude Professionnel*, or CAP) or the Vocational Studies Diploma (*Brevet d'Études Professionnelles*, or BEP) created in 1967. After two more years, for a large number of BEP-holders, there is the vocational *baccalauréat*, which is conceived as a terminal diploma, even if the pursuit of higher education is theoretically possible. A little more than 30 per cent of a given age group enters the vocational high school.
- High school for general and technical education (*lycée d'enseignement général et technologique*), which is a single institution, entered by about 60 per cent of a given age group. After three years of study, it leads to a general or technical

baccalauréat; there are three general streams (literary, economic and social, scientific) and two technical streams (industrial and tertiary), each of which offers several fields of specialisation. The technical streams receive one-third of the students; after the *baccalauréat*, the large majority of students go on to the higher education level.

Higher education takes three forms:

- Universities, which receive more than half of the entrants.
- Higher schools *(écoles supérieures* or "*grandes écoles*") which prepare for various occupations (engineering, business, paramedical, architecture, education, etc.).
- Technical higher education (*études technologiques courtes*). These studies, lasting two years, receive about one-third of entering students and lead to a higher technician level.

Recruitment for apprenticeships takes place mainly after middle school. Apprenticeship can prepare for the same vocational and technical diplomas as full-time schooling, although in practice it mainly trains operatives and clerical employees. In addition, it prepares for the vocational diploma of master craftsman, which was initially reserved for further training.

The content of the diplomas is defined on the national level following study by the Advisory Occupational Commissions (*Commissions Professionnelles Consultatives*) including representatives of employers' organisations and employee unions. For public education, the decision to institute training programmes is made on the regional level after discussion between local authorities and the national representative.

Transformations since the beginning of the 1980s

The changes that have taken place reflect a continuous evolution rather than a wide-ranging reform. The main features of this transformation include prolongation of studies, extension of vocational streams and postponement of choices between streams.

The two preceding decades had seen the creation of the middle school from distinct institutions. In 1975, a common core was finally imposed for the first two years. There were still multiple options after this, however. Some students left the middle school to prepare for the first vocational diploma, the CAP, in a vocational high school or an apprenticeship. Others remained in the middle school but in specific classes for students with learning difficulties. Some of these classes, called "pre-apprenticeship" like the analogous classes at the Apprentice Training Centres, employed a pedagogy including in-company work, but in fact, only half of the students leaving this programme entered an apprenticeship.

In the course of the decade, these "orientations by failure" after the fifth grade were to decrease (from 20 per cent in 1980 to 4 per cent in 1991), and it was decided to eliminate them for 1992 in accordance with the principle that students should complete middle school before choosing an orientation. In order to permit effective instruction, however, measures were implemented to maintain certain distinctions in content during the last two years of middle school (fourth and third grades) but without compromising the pursuit of further studies. Thus in 1984 "technical" fourth-and third-grade sections were created with a significant part of the instruction – at least ten hours a week – devoted to technical disciplines as a way of motivating students and exposing them to ideas, including general knowledge. In fact, these technical sections have often been set up in vocational high schools, where they were easier to organise, but they do not prepare for an occupation, and today they are gradually being transferred into the middle schools. In addition, since 1992, students with learning difficulties who now remain in middle school after the fifth grade benefit from a special support programme permitting them to go on to a high school, usually vocational, or to an apprenticeship. This programme is organised by the middle school, which enjoys a large measure of freedom in this area: it often has recourse to in-company periods, notably during the third grade. There are, however, recurring discussions about the existence of this "single middle school": the most recent round (1993) resulted in a legislative amendment formalising the possibility of re-instituting classes of "pre-vocational initiation in alternance" after the fifth grade.

The evolution of the middle school leads to that of the vocational high school. In the course of the decade, the preparation for the CAP in three years after the fifth grade attracted fewer and fewer students and almost disappeared entirely. Entry into the vocational high school has shifted towards the third grade, and the most common diploma prepared for is the BEP, which leads to the same level of employment as the CAP (skilled worker) but is less specialised (the BEP offers 36 specialisations as compared to 233 for the CAP, which in fact had 314 in 1980) and is more oriented towards the tertiary sector. More generally, a large effort was made on the national level during this period to redefine diploma content towards less specialisation and greater adaptability. In view of their common level, a link has been established between the CAP and BEP: the BEP's competencies are oriented towards a family of occupations, while the CAP is a specialisation oriented more towards performances that are directly applicable to a specific occupation. Most students preparing for the BEP also obtain a CAP. In addition, since 1983, these two national diplomas can be extended by complementary education and training adapted to local employment, usually for a one-year period; the number of participants remains limited, however.

At the same time, the BEP is increasingly becoming a prerequisite for further studies. This occurs in two different ways. The first is through the intermediary of a "reorientation class" for the technical *baccalauréat* which permits entry into higher education, notably technical. Participation in this programme increased two and a half times between 1980 and 1986. The stagnation that followed can be explained by the creation of the second path for the continuation of vocational education, the vocational *baccalauréat*. This diploma was to enjoy tremendous popularity, and the present trend is for BEP-holders to continue their studies towards a *baccalauréat*. It can now be said that a technical and vocational stream has been created, with entries and exits occurring at various levels, including the technical fourth and third grades, preparation for the BEP, the technical and vocational *baccalauréat*, the higher technician sections and even engineering schools. This transformation is the result of both the changing economy and the social demand for longer schooling, as well as organisational decisions.

Apprenticeship follows the same pattern, although in a more modest way. Until 1987, it usually led only to the CAP. Since that date, it can, by law, serve as a preliminary step for any technical or vocational diploma, all the way to that of engineer. This should permit apprenticeship to go beyond the craft and small business sector, which constitutes most of its activity, in order to include the large companies and even the public administrations. At present, however, 75 per cent of those involved are still preparing for the CAP. For general and technical high schools, organisational changes have been less significant. In 1981, a common first year (second grade) was established for the different streams, although distinctions are still maintained through a system of options. Subsequently, until 1992, effort was concentrated on making these distinctions less determining for the students' future. In particular, it is now no longer indispensable to choose technical options in the second grade in order to continue towards a technical *baccalauréat*. However, for these high schools, the main change lies not in structural transformations but in a sharp increase in numbers, which modifies the student population. The same is true for institutions of higher learning.

Outside the education system, the same period saw the creation of a certain number of emergency measures designed to aid labour-market entry among the unemployed, especially unskilled workers, through various mechanisms and contracts that in principle combine training and work. Among the examples that may be cited are skilling contracts and employment-solidarity contracts.

Quantitative trends

The first observation is that there has been a significant growth in schooling and a clear increase in the levels of training over the period concerned. This increase manifests itself in the changing number of exits from the education system by level. Thus, between 1980 and 1991:

- exits without qualification went from 16 to 11 per cent;
- exits at the skilled worker level (known asLevel V) went from 48 to 31 per cent;
- exits at the *baccalauréat* level (Level IV) went from 17 to 25 per cent (in 1993, 63 per cent of a given age group went at least as far as the *baccalauréat*);
- exits with a higher education degree went from 19 to 33 per cent.

In general, this growth has not affected vocational curricula. The numbers of vocational high school students and apprentices declined during this period, as did the number of entries, and this decline was proportionately greater than that of the age groups. But the structure of these curricula has changed: their entry level has risen and they have been extended.

In reality, the increase in the length of schooling is above all the result of an increase in the length of general training, which has postponed choices, notably the orientation towards a vocational or technical stream.

3. Company participation in training

Apprenticeship

This is the most traditional form of vocational education and training. It goes back to the ancient guilds which antedate the French Revolution and the Industrial Revolution. It has basically survived in the craft occupations, while large companies have long made do with rapid "hands-on" training.

Throughout the nineteenth century, there were government efforts to organise apprenticeship: the law of 1851, for example, set the minimum age at 12 years and provided for an apprenticeship contract including vocational courses. This legislation was rarely enforced, however, and it was not until 1919 that a law on technical education called for at least 100 hours a year of free, compulsory vocational courses organised for the apprentices by the municipalities.

The set-up is not much different today. Training is shared by the company, with a "master" in the workplace, and an Apprentice Training Centre, which is responsible for the complementary theoretical and technical instruction, based in principle on the apprentice's experience in the company. A certain number of attempts were made during the 1980s to encourage this "pedagogy of alternating training". Apprentices sign a specific work contract with the company for a period of one to three years, most often two years, and they are paid wages, currently between 25 and 78 per cent of the minimum, depending on their age and seniority.

The training period at the CFA is at least 400 hours a year; the real average length of training for the CAP is not much more than this, but it is considerably higher for the vocational *baccalauréat* and the higher technician diploma. The legal structure of the CFAs varies, but they are most often run by an organisation close to the companies, such as the guild chamber, the chamber of commerce or an employers' group. Some of them remain under the control of the municipalities, and a small number are attached to an education institution; this last arrangement may expand in coming years. Since the decentralisation of 1983-1985, the CFAs are set up and funded through an agreement with the region where they operate. Another part of the funding comes from a tax paid by the companies. The state remains responsible for the monitoring and pedagogical organisation of apprenticeship through a team of inspectors.

The volume of apprenticeships varies sharply according to region, owing less to political choices than historical factors, notably those tied to the former employment structure. For the moment, apprenticeship remains most widespread in craft occupations and small businesses such as food products, otel management, construction and hairdressing. In recent years, however, national and regional governments and the employers' organisations have made efforts to develop apprenticeship in industry and, since 1992, in the public service. Apprenticeship remains predominantly male (70 per cent) even if the proportion of women is slowly increasing. Many of those who enter apprenticeships have been unsuccessful in middle school.

The 1987 law opening apprenticeship to levels other than the CAP has not yet had its full effect. Three-quarters of all apprentices are still preparing for the CAP, but the proportion is decreasing; it was 97 per cent in 1988-89. In particular, apprenticeships are beginning to emerge at the higher education level (4 per cent in 1993-94).

Skilling contracts

These are the product of a 1983 agreement between the social partners, later ratified by the government, which was intended to address the employment problems of young people. This agreement provided for three kinds of alternating training: orientation to working life (subsequently eliminated), adaptation contracts for young people with diplomas and skilling contracts aimed at allowing their beneficiaries to obtain a recognised qualification, which means that they fall within the training system.

Here too, the training involves the company, through participation in production, and a specialised body. Alternating training seems to be less precisely organised than is the case with apprenticeship. If it is stipulated that one-quarter of the time is to be devoted to training per se, 25 per cent of this period can be based in the company without any verification of its use. For the remaining time, any training body can be selected; they are often further training organisations and sometimes CFAs. The contract can target one of the diplomas obtained in the vocational high school or through apprenticeship, but also another qualification recognised by the collective agreements of the occupational branch.

The contract lasts 6 to 24 months. Remuneration is the same as for an apprenticeship contract; the age limits are also the same, 16 to 25 years, and the number of entrants each year are roughly comparable; 100 000 for the skilling contracts and 120 to 130 000 for apprenticeships. In fact, measures were recently taken to harmonize the two forms of training, in order to avoid competition between them.

In practice, however, differences exist, and it is still too early to say whether or not they will diminish. Apprentices basically come from the school system, for example, while candidates for skilling contracts come from both the school system and unemployment, and even jobs. The entry level and qualification sought are on the average higher for the skilling contract. The participating companies, meanwhile, are more varied in the case of the skilling contract, with a greater number of large- and medium-size companies (in 1991, more than half the companies had at least 10 employees).

The school-based alternating training system

As we have already indicated, vocational education and training in France is mainly school based. This choice was made in the 1950s in response to the persistent inadequacy of the apprenticeship system in the face of manpower needs created by post-war reconstruction and the subsequent economic growth.

There was, however, an increasing awareness of the danger of isolation from the companies. This awareness became particularly acute during the 1980s, when the economic crisis spurred a search for greater competitiveness in the companies and the problem of unemployment became crucial, especially among young people. One response to this situation was the idea of periods in the company during school-based training, an approach that had, in fact, always existed in higher training programmes such as engineering schools, higher technicians sections, university institutes of technology and masters of sciences and techniques.

From 1980 on, "educational in-company sequences" were introduced in the training programmes of vocational high schools leading towards the CAP and BEP. These lasted a few weeks, most often two or three, and were complemented by classroom preparation and follow-up activities. Left to the initiative of the education institutions, their development was to be rather slow, because of both the reticence of certain teachers, especially at the beginning, and the difficulty of finding host companies, particularly among the largest ones. By 1989-90, however, the method was fairly widespread.

With the increase in unemployment that followed, it became apparent that young people were less and less likely to go from training to employment, and that a kind of "waiting room" for labour-market entry was in the making. This "waiting room" includes alternating training contracts as well as skilling contracts, but also the complementary training programmes set up by local authorities to co-ordinate national diplomas such as the CAP or BEP with local employment supply. Instituted in 1983 by the National Education System, the complementary training programmes, defined jointly by an education institution and companies, give an important place to alternating training, whereby one-third to one-half of the time is often spent in the company. This idea was further developed after 1984 with the creation of the National Education System's programme for youth labour-market entry (*Dispositif d'Insertion des Jeunes*), which includes various activities in alternance aimed at students leaving an education institution with or without a diploma.

Also in 1984, the integration of school and economy, which had already been under way, gained a more official status with the establishment of twinning agreements between education institutions and companies, as well as national-level High Commission on Education and the Economy. The creation of the vocational *baccalauréat* the following year provided for compulsory periods in the company for about one-quarter of this training programme, with evaluation taken into account for the granting of the diploma.

The 1989 Law on Education reiterated these initiatives by including labour-market entry among the schools' missions and specifying that "schooling can include training periods in companies, on the initiative of the education institutions and under their responsibility (...). These periods are conceived in function of the instruction organised by the institution offering the training. They are compulsory in educational programmes leading to a technical or vocational diploma".

This constitutes a definition of what has been called the school-based alternating training system (*alternance sous statut scolaire*), in order to distinguish it from alternating training with a work contract (such as apprenticeship) or skilling contracts. The difficulty was to convince the companies, given that they would not be at the origin of this alternance, which is tied to the needs of training rather than employment. The measure dealing with preparation for the CAP and BEP was thus gradually instituted from 1992 on, specialisation by specialisation, on the model of the vocational *baccalauréat* but with a slightly shorter in-company period (twelve weeks for the CAP, eight for the BEP). The fact that the in-company periods count for the granting of the diploma is an important feature, but their evaluation is not easy to implement; it is carried out jointly during the training period by the high school teacher and the tutor named by the company.

4. Labour-market entry

Overall, the unemployment of young people under 25 rose between 1980 and 1985, declined until 1989 and has risen again since 1990. The trend is the same as for the whole of the economically active population, but with sharper fluctuations, and the youth unemployment rate is considerably higher than that of the rest of the economically active population. The unemployment rate, and also the rise in unemployment over time, are, however, less pronounced as the exit level increases. In particular, the unemployment rate remained virtually constant for those exiting higher education between 1981 and 1992, even though their numbers greatly increased; their situation appears to have declined in 1993, however.

Comparisons between countries are difficult, since the definition of the unemployment rate depends on the structure of the training system. It is recognised, however, that the youth unemployment rate, according to the ILO definition, is higher in France than in many countries with comparable economies, while the proportion of unemployed youth seems to be lower than in most countries, with the exception of Germany and Japan, because of the high rate of schooling in France.

One hypothesis currently advanced in France would explain youth unemployment by the structure of the vocational education and training system, which is predominantly school based. An attempt to verify this can be made by comparing unemployment upon exits from apprenticeship and education institutions. In fact, with comparable diplomas, an apprentice is slightly less often unemployed in the months after exiting the apprenticeship, notably because of the possibility of remaining in the same compa:ny. For example, among those exiting in 1989 at Level V, 22.1 per cent of the former apprentices were unemployed on 1 February 1990, as compared with 23.3 per cent for the former vocational high school students. More important perhaps is the fact that apprentices are more often salaried employees, while students are more likely to be hired with a precarious labour-market entry contract. But the situation varies from one region to another, and comparisons are not very significant owing to differences in areas of training and gender. Young women, for example, are slightly more often unemployed after apprenticeship. It is thus difficult to draw conclusions.

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GERMANY

Pedagogical Objectives and the Organisation of Alternating Learning at School and at Work

by

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1. The historical and institutional background of the German dual system

The organisational concept of dual vocational training became structured around the year 1900. In 1938, attendance at vocational schools complementary to training in companies became compulsory for apprentices. In contrast with other countries (*e.g.* France), in Germany the majority of an age group enters the apprenticeship system, which is separate from the public education system.

The principle of alternating in-company training and school-based training remains uncontested in the German system of vocational training. Unlike the types of "alternance" known in school-based VOTEC systems, the dual system places emphasis mainly on the role of companies:

The dominant position of the companies, as compared to that of schools, becomes obvious by the following aspects:

- The training capacities within the dual system are determined by the training places provided by companies, and not by the offers made by vocational schools.
- The proportion of time covered by in-company training amounts to 3-4 days per week.
- The training directives developed for in-company training by the social partners with the co-operation of the BIBB, and passed by the Federal Minister, largely pre-define the vocational-technical part of the curricula for vocational schools.
- The certificates of the final examination are granted by the chambers of commerce and industry.
- In the eyes of the trainees, the company has, in most cases, a higher priority than the vocational school. The youths have a training contract with the company and, in the majority of cases, they can expect to be offered a job later by that company.

This form of "alternance" has some important consequences, both for the regulation of the training system, for the pedagogical objectives involved and for the organisation of the training in the school and in the company.

The objectives of the in-company vocational training are described in the Vocational Training Act. In accordance with this act, vocational training provides a broad basic training and the necessary technical knowledge and skills that are required for any work in a qualified job. It should also allow apprentices to gain the necessary practical experience. On the basis of an agreement by the Ministers of Education of the Federal States (*Länder*) of the Federal Republic of Germany, the vocational schools aim to impart a basic vocational and technical training, to enlarge all knowledge previously acquired and to create a willingness to participate in adult vocational education.

2. The German case of alternating learning at school and at work

The structure of learning sites is not static. Today there is a mix of learning locations

The state-subsidised expansion of inter-company training centres that started in the early 1970s has created a new type of learning site. Formally speaking, inter-company training is a supplementary part of in-company training. On the one hand, it is meant to put small- and medium-sized and highly specialised enterprises in a position to offer complete training. Such inter-company training centres can also help to organise certain parts of the in-company training in a pedagogically more systematic way, by making use of modern technologies. At the moment, Germany has about 600 such centres providing around 75 000 places. To guarantee the greatest possible flexibility, the duration and contents of such inter-company training are, in most cases, not regulated in a uniform way.

In the majority of cases, in-company training no longer takes place exclusively on the job, nor does school education only take place in the classrooms. Vocational schools now have, besides the traditional classrooms, a growing number of training workshops or offices for practice, equipped with modern technologies. Especially in large companies, training generally takes place outside the work processes and is largely carried out in training workshops, offices for practice and classrooms. The expansion of automation has been a major factor in this development. Work processes have become more and more abstract and learning by doing has become even more difficult by the fact that practising on the job is no longer possible in complex and expensive production plants.

The didactic links between training in companies and at school is a pedagogical objective but in reality an exception to the rule

As training courses become increasingly varied between and within companies and in schools, it has become all the more important to harmonize them. It has to be stressed that a comprehensive general programme for the dual system does not exist. The training regulations for the in-company training and the core curricula of the schools harmonize the duration and subject matter by defining the respective contents to be imparted by the two learning locations, generally each semester.

Harmonization, on a pedagogical and methodological level, of the different stages of training at work and in school is only organised for a small proportion of apprenticeships. Contacts between the trainers and teachers are in most cases encouraged by learning and disciplinary problems of certain trainees and by preparing the trainees for their final examinations. The training personnel in large companies clearly co-operate more closely, and regularly with vocational schools than does the training personnel in small- or medium-sized companies. The personal commitment of the individual trainer or teacher is decisive in determining the level and objectives of this co-operation. Communication problems and fears of contact often are due to different interests and pedagogical orientations.

However, even the absence of links between the contents of the apprenticeship placements in the different learning locations does not necessarily mean that the training objectives cannot be achieved. In such cases, it is largely left to the trainees themselves to link together what they have learned in these different worlds, at work and in school.

New objectives in vocational training require new pedagogical concepts

In the mid-1980s, a certain ideal of a skilled worker able to independently plan, carry out and control his work became widespread in Germany. This new ideal was based on the assumption that, due to technological and economic structural developments, many highly specialised, repetitive and externally monitored jobs will be replaced by jobs comprising a broad variety of tasks which, in addition to comprehensive technical qualifications will also require social qualifications. Key qualifications such as the capacity to assume responsibilities, to co-operate and to think in terms of global systems are expected to gain importance. The acquisition of a comprehensive professional competence is increasingly becoming a general objective both for in-company training and learning at school.

As vocational training will be increasingly a matter of personality development as well, the dividing lines between vocational training and general education, highly institutionalised in Germany, will become blurred.

It was first of all large companies which recognised that the didactic principles of traditional learning on the job: "show/explain-imitate-correct-practice" were no longer sufficient to transmit the general, technical and social competences necessary for any type of independent work. Pilot projects, subsidised by the State, experimented with new forms of training from the early 1970s onwards, aimed at increasing trainees' control over their own learning (*e.g.* project-method, guide texts). In these methods, the trainers rather become the students' advisors.

Education in vocational schools is still dominated by the transmission of theoretical knowledge by subject. But there are also attempts to practice new didactic and methodological concepts, which aim more at increasing students' capacity to act independently than the teaching methods practiced so far, which focused everything on the teacher (*e.g.*

project teaching). In order to make school learning more action-oriented and better relate it to complex situations or problems in the workplace, the traditional separation between theoretical and practical education within a particular subject and between different subjects must disappear.

Overlapping of functions could be avoided through flexible co-operation between learning locations that are independent on a pedagogical level

The fact that companies, in their training, are increasingly using some of the learning methods employed in schools has called into question the traditional principle of a division of labour between schools and companies, according to which schools taught "theory", while companies were responsible for "practice". With the appearance of inter-company training centres, the vocational schools often complain about a certain overlapping with what they teach.

In order to guarantee a high efficiency of the dual system, it will be necessary to focus closely on the learning possibilities specific to each learning location. These locations could then develop their own pedagogical profiles and make them complementary to each other. The different learning possibilities existing at local levels within the individual learning locations must be co-ordinated in a flexible manner.

Companies can first of all offer the possibility of situation-oriented learning that benefits from experience gained at work. In inter-company training centres, work processes can be simulated for the purpose of learning, while schools can provide the necessary scope for a learning based reflection and for an extension of the student's general knowledge.

Is there a renewal of learning at work?

The growing practice of separating training from the work process is now considered a problem. In view of future skill needs, learning in complex work situations is again becoming a priority, despite organisational and technical obstacles.

Accomplishing practical tasks at work undoubtedly provides considerable chances to learn, especially if:

- it is carried out in a less standardized way;
- it allows a certain creativity in applying knowledge acquired;
- it requires a certain social competence.

Thus the efficiency of any job-related form of learning will depend on certain work structures that are suited to learning processes. It is evident that all Taylorist forms of organising work will lead to restrictions. The personnel responsible for training in companies play a key role:

- in finding the types of job-related tasks that can promote learning processes;
- in elaborating suitable didactic and methodological materials for the self-controlled learning of the trainees and in integrating the materials into the training.

An appropriate pedagogical competence is important. This raises the question of further education of the trainers.

Mechanisms of qualitative innovation in the dual system

The combined action of research financed by the State, of the training of personnel responsible for vocational training and their pedagogical commitment, especially in large companies, constitutes a central motor for pedagogical innovations within the dual system. Any new demands on the qualification of future skilled workers are generally rapidly accepted and supported by the specialised training departments of large companies. Particularly innovation-oriented companies make wide use of these pilot projects subsidised by the State and scientifically controlled. Such models for the promotion of innovations also exist for vocational schools, and also for problems that affect schools and companies alike (*e.g.* improvement of co-operation among the different learning locations).

However, the translation into practice of such innovative approaches, has operational limits (*e.g.* costs). The developments initiated by large companies (with or without state support) set certain quality standards which have repercussions on the training in small- and medium-sized enterprises as well, and sometimes even on vocational schools. In spreading the ''best practices'', the chambers of commerce and industry, trade associations, trade journals and conferences play an important part. Public regulations will, in most cases, only pass as minimum requirements those quality standards that have already proved their efficiency in training practice and can be widely accepted.

3. Some final remarks on the perspectives of the dual system

What kind of innovations are needed for a future-oriented development of the dual system? This is presently a very controversial question.

Attractiveness

Two groups of problems which directly affect the pedagogical level are at the centre of the discussions. Out of concern for keeping the dual system attractive (for those who wish to continue their training) those responsible for vocational training are unanimous in their demand for an equal status of vocational and general education, when it comes to undertaking further education and training. One prerequisite would be to organise the vocational education courses in a way that fills the necessary conditions for following the stages of general education. Suggestions concern examinations, the development of programmes leading to a double qualification, and the formal recognition of equal status between vocational and general education diplomas, which would require an extension of the range of subjects in vocational schools.

Individualisation

The growing differentiation of school backgrounds of trainees in the dual system leads to the question of how far it is necessary to individualise and differentiate the training, in order to better respond to the various capacities and preferences of young people. Everybody is in agreement about the need to:

- offer students who arrive with a better school qualification the possibility to study at university;
- give students with learning problems a better chance to acquire a training certificate.

The suggestion of developing supplementary vocational courses, as well as certain inter-professional departments for an additional qualification that surpasses the minimum standards set by the official training regulations, is widely accepted. Opinions diverge, however, on the issue of how those with poorer achievements should acquire a recognised qualification. One proposal would be to lower the level of training. Another proposal suggests developing certain pedagogical support measures for the benefit of students who take vocational training programmes.

SPAIN

Constructing an Institutional Framework for the Social Regulation of Alternance

by

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1. Introduction

The implementation of an institutional framework for the social regulation of alternance in Spain will take place along three main lines. First, the content of existing qualifications and their mode of acquisition must be changed. Secondly it is necessary to adapt the mechanisms of labour market entry to the requirements of young people, who have been badly affected by unemployment and the instability of the labour market. Lastly, there is a need to smooth the difficulties which are inevitable to any institutional innovation which challenges the attitudes and behaviour of the actors involved in training and enterprises.

Changes in the content of qualifications and their mode of acquisition

Changes in the content of qualifications across OECD Member countries, the result of socio-economic structural transformations, have given rise to the need for new methods and structures for skills training.

In these nations, as in Spain, the changes have affected alternating training and its social regulation in three main ways:

- As regards the acquisition of qualifications, the participants in "co-production" between training institutions and enterprises are gaining new ground and enrolling new protagonists, bringing the focus back onto the individual and breaking down the traditional barriers between workplace training on the one hand, and vocational education and training on the other. Vocational education and training tends to be geared more closely to the individual and to actual work situations, to designing new strategies and to gradually assimilating new, non-traditional ideas (*e.g.* "key competences" in the course of an individual's training, the idea of interactive training, and the introduction of general education in the continuing training programmes available within enterprises).

- A greater degree of personal commitment and initiative is being encouraged among all those involved in training processes (students, company managers, employees and public authorities) and has led to a change of attitude. Instead of merely delivering a prepared script like an actor, the individual is now viewed as a free agent taking an active part in the setting up of "alternance".
- The institutional regulation of alternance (in Spain as elsewhere) should therefore take place in such a way as to allow all those concerned to intervene, taking a long-term overall view of the question.

The difficulty of the school-to-work transition

In parallel, developments on the Spanish labour market, which is characterised by a high unemployment rate, particularly among the young, indicate the difficulty of some groups of young people to find and keep a job. Under these conditions, any measures which create contacts between young people and enterprises at the end of the first stage in their initial education and training, are welcome, so that the former can become acquainted (often for the first time) with the workplace, and with enterprises and employers.

How are we to fulfil these requirements?

Neither defining new qualifications nor facilitating contacts between young trainees and their potential future employers suffice for training specialists and enterprises to fulfil these requirements at the drop of a hat. The answer is to be found at three levels: by undertaking institutional reforms, and by changing the traditional attitudes and behaviour of the social partners.

Innovation at any level is difficult to put into practice, since the declaration of novel principles often meets with a wall of resistance.

Spain is at present beginning to break away from an old legal and institutional framework. The new approach, some aspects of which have been severely criticised by the trade unions, is still in the implementation stages and far from fully integrated into the thinking and behaviour of the actors involved.

The context described above explains Spain's growing interest in strategies for creating links between the training system and enterprises during initial vocational education and training. Co-operative projects of this kind have developed considerably during the last ten years in Spain.

2. Alternance in initial vocational education and training in Spain

Considerable efforts have been taken in Spain over the last decade to introduce alternance into initial vocational education and training programmes. This ten-year period can be subdivided into two phases, in terms of the institutionalisation of alternance, namely: the period up to 1990, when the *Ley Organica de Ordenacion General del Sistema Educativo* (LOGSE: General organic law regulating the education system) was approved; and the present period, marked by the extension of this law and the approval of new legislation, in January 1994, on apprenticeship contracts.

The background

During the 1980s, and particularly since 1984, when the Economic and Social Agreement was signed by the government, the UGT trade unions and the Spanish Confederation of Organisations of Heads of Enterprise (CEOE), two forms of training resembling alternance have developed in Spain:

a) training placements at enterprises for students undergoing "regulated vocational education and training" (school-based training) as a complementary part of their school curriculum;

b) "employment training" contracts for young people under the age of 20 with no professional qualifications.

In a report on apprenticeship in Spain, Planas (in Jallade J.P., *Les développements de l'apprentissage dans le cadre des programmes de formation professionnelle des jeunes,* report to the EEC, DGV, 1987) concludes as follows:

- *The trends*: During this period, many forms of alternance developed, although often in an uncontrolled way which gave rise to doubts regarding the quality of training offered by enterprises and such training-employment contracts. The great increase in numbers taking alternance apprenticeship programmes has unfortunately not been accompanied by qualitative support or quality control that would have allowed alternating training to consolidate its position without distorting its content. This was the main challenge facing apprenticeship in Spain at that time.
- *Obstacles to the consolidation of apprenticeship*: The main difficulty was the lack of a tradition or culture of apprenticeship and alternance among the actors involved. This had the following consequences:
  - Most enterprises were aloof regarding the training part of alternance.
  - There was an absence of real and official links between the theory and the practice for the work placements of students in vocational training as well as for those under employment-training contracts.
  - There was a gap between the social, educational and budgetary implications of these apprenticeship programmes and the human and economic resources actually devoted by the public authorities to their follow-up, supervision, assessment and support. This furthermore resulted in a dearth of available information

about the situation and the results of implementing the provisions relating to apprenticeship and alternance.

- *The report made recommendations concerning*:
  - The need to establish a legal, institutional and budgetary framework that would encourage the involvement of the social partners and the various levels of government, especially at the local administrative level. This institutional framework, national in scope, was to consist of two elements: a guarantee of the quality of the training dispensed in alternance programmes, and an adequate link between the theory and the practice. More specifically, it was recommended that school-based vocational training should integrate training placements into their general curriculum, and that appropriate supervision should be carried out to ensure that the training part of employment-training contracts was actually provided and that the quality of this training was up to standard.
  - The need to set up mechanisms encouraging an "alternance apprenticeship culture" in Spanish enterprises. Involvement of the social partners and their organisations constitute the sole means of ensuring that the institutional initiatives do not become meaningless.

The current institutional framework of alternance in Spain

Nearly seven years after the report on "Apprenticeship in Spain" was drawn up, it is possible to affirm that change has mainly taken place at the institutional level rather than at the level of developing an "alternance apprenticeship culture". There is a recognised risk that enterprises may decide to implement these"alternating education and training" strategies for their cost-effectiveness rather than their training function.

The institutional forms of alternance in Spain

At present, the institutional forms of alternance training in Spain are specific vocational training at the intermediate and higher levels, in the framework of the LOGSE, and apprenticeship contracts.

a) Specific vocational training scheme defined in the framework of the LOGSE

The *Ley Organica de Ordenacion General del Sistema Educativa* (LOGSE, 1990) (general organic law regulating the education system) instituted a two-level Specific Vocational Education and Training Scheme to prepare students for activity in a particular occupational field while giving them a broad enough general background to enable them to adapt to changes in the labour market occurring during their working life. The two levels are as follows: the intermediate level (FPSM) for young people who have accomplished their period of compulsory schooling (up to the age of 16) and obtained satisfactory results (although there exist other modes of access, such as obtaining recognition for past work experience), and the higher level (FPES), intended for students who have obtained their school-leaving certificate (but with exceptions similar to those mentioned above).

The curriculum of the Specific Vocational Education and Training scheme instituted by the LOGSE at both of these levels includes a compulsory period of training at an enterprise. This is called Training at a Work Centre (FCT), and in this context, the relationship between an enterprise and a trainee is of a non-professional nature.

Neither the duration nor the content of these training programmes are fixed but can vary depending on the occupational field and the level involved. At the present stage of implementation, their total duration ranges between 1 400 and 2 000 hours, whereas the time spent training at a Work Centre ranges between 300 and 400 hours.

This "new" type of vocational education and training including a compulsory period at a Work Centre is gradually replacing the previous system, which still predominates. It has been predicted that the new system will be fully implemented by the year 2000. This is why the present situation is characterised by the co-existence of two systems of vocational education and training. The former, still predominant, based on the LGE (1970), and the new system defined by the LOGSE (1990), which is in the process of being implemented.

b) Apprenticeship contracts

Apprenticeship contracts are temporary work contracts for young people, which can be extended. They involve part-time training, with reduced social contributions and a salary below the minimum wage. The maximum number of young people an enterprise is entitled to hire as apprentices is proportional to the number of employees on the enterprise's payroll. These contracts are basically similar to the previous "Contracts for Training", but the age limit has been extended from 20 to 25 years and the time allocated to training is limited to 15 per cent.

In connection with the "Training and Employment Contracts", it is worth mentioning the *Escuelas-Taller y Casas de Oficios* (Workshop Schools and Houses of the Trades and Professions) attended by around 30 000 young people per year, set up by the Ministry of Labour, as well as the "Training Guarantee" programmes extended to several thousand young people by the public authorities responsible for education (Ministry of Education and regional governments) in collaboration with the Federation of Town Councils. These programmes have been developed up to now by applying the previous provisions of the "Training Employment contract". These measures will probably be continued in the new "Apprenticeship Contract", but without restrictions on the number of apprentices enterprises can take on. All of these programmes were designed to help young people with large gaps in their initial education who face difficulty entering the labour market.

The objectives, content and development of training at work centres

The objectives, content and development of Vocational Education and Training at Work Centres, as established by the LOGSE Specific Vocational Education and Training regulations, merit particular attention since it is particularly in keeping with the spirit of "alternance".

Although Training at a Work Centre (FCT) is part of the Specific Vocational Education and Training (FPE) programme, it has its own particular objectives and content (which are specified by the administration responsible for educational matters) as well as its own assessment criteria.

The specific objectives of the FCT (1992) are as follows:

- to complement the knowledge, capacities and skills acquired at school;
- to facilitate the acquisition of the techniques and abilities required by the organisations and specific structures associated with the Work Centres;
- to facilitate the application of knowledge acquired at school;
- to encourage a sense of responsibility, independence and occupational creativity;
- to provide information about the socio-technical structures and industrial relations;
- to promote contacts and the exchange of technical information between the systems of production and education.

These different objectives imply that the Work Centre must adapt to its productive environment. Consequently, the responsibility for its development is in the hands of the government of each autonomous community, regarding its programme content and duration and also the agreements between partners necessary for its implementation. Teachers from the education system and tutors from the Work Centre will be jointly responsible for the follow-up and assessment of the Work Centre programme.

Institutionalisation of the social regulation of alternance in Spain

The two main mechanisms governing alternating training in Spain come within the scope of Vocational Education and Training policy and employment policy. The social partners responsible for elaborating and implementing these policies are therefore the General Council for Vocational Education and Training (CGFP) and the Economic and Social Council (CES).

The public authorities at the national level, along with the Educational Counsellors of all the Autonomous Communities (at both the Autonomous Community and regional levels), participate in a Conference on Education presided over by the Ministry of Education. However, responsibility for vocational education and training (school-based as well as in the framework of employment measures) is gradually being transferred to the governments of the Autonomous Communities and regions. This means that, in some cases, the social partners have set up specific organisations with differing structures that share the common goal of harmonizing the contributions of the employers' and trade union organisations and those of the various territorial administrations involved.

Another point worth mentioning in the process of institutionalisation of vocational education and training is the role recently attributed to the Chambers of Commerce, Industry and Navigation (Official Chambers of Commerce, Industry and Navigation Act, 22 March, 1993). The Chambers of Commerce collaborate with the competent education authorities in the selection and certification of the Work Centres at which training courses are to take place. They are also involved in the designation of training supervisors and the control of the vocational education and training programme implemented at Work Centres. Other employers' organisations, the CEOE, the CEPYME and a few enterprise associations at the sectoral level, also play an active part in vocational education and training.

Experiences outside the institutional framework

In addition to the institutional and legal framework of alternance, there exist social and institutional patterns which play an essential part in what one might call the "logic of alternance".

Individual behaviour: the employment of young people during their schooling

According to the available statistics, a large number of young Spaniards (around 40 per cent in Catalonia) regularly work more than half-time while pursuing a programme of studies.

The widespread trend of "student-workers" and "worker-students" in the transition phase between school and work suggest that a "spontaneous" process of alternance or dual development may occur in young peoples' training pathways.

This process of dual development is not institutionalised, however, and little is known regarding the content of the work carried out by these students and the relationship to their study programme. Nevertheless, one of the main aims of dualisation in vocational education and training is to facilitate the process of "work socialisation"; these examples of a spontaneous dual development fit in with this aim. Furthermore, it seems desirable that the content of the employment should be relevant to that of the vocational education and training in the case of worker-students who pursue studies with a view to improving their professional status.

Experiences of a more systemic nature

More or less spontaneously and by mobilising all of the institutional resources available, a multitude of diverse initiatives has taken root which aim at the creation of close relations between the world of education and the world of work. The goal of these experiments is to facilitate the entry of young people into the labour market. Their systemic nature, which includes both social and occupational integration, as well as their complexity, surpass all of the "standard measures" described above.

The amplitude of this phenomena can be judged from the "Inventory of School to Work Transition Initiatives in Spain", surveys carried out in 1986 and 1987 as part of the Spanish project for integrating the programmes of the European Union. Some of these programmes have subsequently become part of other Community projects and initiatives such as PETRA, NOW, FORCE, etc.

In most cases, these schemes involve training at Work Centres in the framework of Specific vocational education and training (FPE) or vocational training in the context of employment measures. There exist training contracts and other special forms of contract intended to facilitate young people's entry into the labour market.

Most frequently these initiatives are proposed by the local authorities and vocational education and training centres.

Attempts have been made to co-ordinate the contacts between local educational establishments and enterprises in order to make the best possible use of the public- and private-sector resources available in the area to facilitate young people's social and professional integration. These attempts have taken many forms, among which the foundations for the promotion of vocational education and training and the local "School-Work" services deserve special mention.

The initiatives conducted at training centres are based on the possibilities for co-operation and innovation that exist between training centres and their economic environment. These efforts have again taken many different forms. Particularly noteworthy are the recent initiatives promoting a specific branch of production, such as the "Technology Weeks" which were organised by one training centre in collaboration with enterprises in the vicinity; and the "twinning" programmes between a training centre and one or several enterprises in the same sector. These are illustrations of joint actions in the fields of initial and continuing vocational training for employees and technological innovation.

3. The context of social regulation of alternance in Spain

The past and future development of alternance in Spain is to a large extent linked to the context in the other member countries of the European Union. However, Spain obviously has its own national particularities, which influence the implementation of alternating training initiatives.

Changes in Spanish enterprises and their strategies for innovation

The attitudes of enterprises regarding training, particularly when it is viewed as a medium- and long-term investment, largely depends on their interpretation of the economic crisis and the strategies they choose to deal with the changing situation.

On the basis of a survey carried out by the Institute for Economic Studies, enterprises in Spain can be classified according to the following typology:

- *a)* the "strategic restructuring" enterprises which have a global interpretation of the crisis and consequently elaborate a strategic approach to labour organisation and business management in order to adapt to the changing environment;
- *b)* the "tactical" productive enterprises, the main concern of which is to reduce costs and increase productivity;
- *c)* traditional, conservative enterprises which react defensively to the changing environment.

The diversity of these entrepreneurial approaches to the economic crisis is reflected in a variety of attitudes towards vocational education and training and the role enterprises should play in this regard. The strategies adopted by an enterprise in matters of vocational education and training are therefore not based purely on pedagogical considerations; it is above all a business question.

Recognition of qualifications and Spanish industrial relations

With a view to establishing correspondence between vocational education and training diplomas and the various professions on which vocational education and training programmes are based, it is necessary to analyse the extent to which the certified qualifications are recognised by the enterprises.

Certified vocational education and training is, in fact, given very little formal recognition in the internal markets of Spanish enterprises. The system of classification of skills is not harmonized with training certification. Furthermore, vocational education and training diplomas do not serve as the basis for classifying occupational categories and defining wage scales in the collective agreements.

This lack of correspondence between training certification and recognised qualifications also gives rise to problems in harmonizing the vocational education curriculum with training placements, which will in turn undoubtedly make it difficult to define the training curricula to be adopted at Work Centres.

Some steps have recently been taken by the public authorities and the involved organisations (in particular, the General Council for Vocational Education and Training) with a view to improving this situation. The national programme for vocational training has the following goals:

- to establish a unified system of professional diplomas and certification with equivalency, at all levels, between the Ministry of Education's Catalogo de Titulos professionales (Catalogue of professional diplomas) and the Ministry of Labour's Repertorio de Certificados de Profesionalidad (Directory of Professional Qualifications);
- to implement a plan for the recognition of the qualifications of job seekers in relation to the system of vocational education and training diplomas;
- to set up a system for the recognition of the qualifications acquired by employees through continuing vocational education and training (*Acuerdo de Formacion Continua*).

Parallel with the present parliamentary debate on the "Apprenticeship Contract", discussions are taking place regarding the mechanisms for validating and recognising qualifications acquired working in the context of the "Apprenticeship Contract". The debate relates directly to the system of professional diplomas and certificates.

Young people's expectations

It is generally believed that vocational education and training is neither subject to the law of decreasing benefits nor has any "side-effects" on the persons trained. It is true, however, that the widespread development of vocational education and training in

Spain has also led to a widespread increase in young people's professional hopes and expectations.

The expectations of young people, in part generated by the school system, may be at variance with some of the proposed measures of labour market entry. These arrangements are often extended indefinitely and are precarious (in terms of employment stability and salary) without the beneficiary necessarily receiving high-quality training in exchange. Young people are tending to demand higher standards of alternance, as some student demonstrations in Spain during recent years have illustrated.

The increased expectations of young people have not found a solution on the labour market via vocational education and training. This has contributed to a deterioration in the social integration of many young people, whose hopes have not been fulfilled. Meanwhile, vocational education and training has not fulfilled its role.

4. Alternance and its professional actors

The successful day-to-day operation of alternating training programmes depends on the training supervisors of the training centres and enterprises. These two actors, the "training centre tutor" and the "company tutor", must ensure that both types of training are integrated into a common curriculum. This involves co-operation on the design of the training curriculum as a whole and being sufficiently well informed about the "other" side of the picture.

The successful intervention of these two professional figures might be facilitated by more systematic forms of co-operation between schools and enterprises, permitting exchange in both directions on technological issues, vocational education and training, and general training matters, and by involving the professional representatives on both sides in each other's training programmes.

In this way, even the tutors involved in alternance would alternate. The LOGSE has furthermore provided for teachers from vocational training centres to participate in continuing vocational training at enterprises, and for technicians from enterprises to be present at schools. This should ensure a high standard of tutorship, as the tutors will have a better understanding of both realities: that of the school and that of the enterprise, and they will also be familiar with the students' behaviour in both contexts.

It remains to be decided who will carry out these tasks in the framework of Apprenticeship Contracts and how this will be done.

5. Progress achieved and difficulties encountered in constructing a system of alternance in Spain

In summary, the construction of the mechanisms of alternance necessary for the initial vocational training of young people is a complex task, simultaneously involving elements of development, contradiction and conflict.

On the one hand, considerable efforts have been made to institutionalise alternance in school-based vocational education and training, thus filling one of the greatest shortcomings of Spanish legislation in this field: training placements have been integrated into the vocational education and training curricula under the heading "Training at a Work Centre".

On the other hand, forums for dialogue have been created at the national level and in most of the Autonomous Communities, involving both workers' and employers' organisations as well as representatives of the public authorities concerned.

Noteworthy efforts have also been made to define the quality standards of the training provided at Work Centres in the framework of Specific vocational education and training (FPS) as well as the functions of the tutors on whom the quality depends. As far as apprenticeship contracts are concerned, the conditions and guarantees for its application have not yet been defined.

Having thus defined the institutional framework and the authorities responsible, a culture of alternance nevertheless still remains to be promoted and integrated into the social fabric. As regards the implementation of standards and the commitment of the social partners to the functioning of alternance, a lot remains to be done: there are traditional mentalities to be changed, questions to be clarified and fears to be put to rest.

Furthermore, the quality of the pedagogical aspect of alternance requires great organisation in the schools and in the enterprises. This has still to be create, particularly in the enterprises. The employers' organisations have affirmed their commitment to reaching a general agreement on the measures proposed by the government concerning the Work Centres and apprenticeship contracts. The trade unions have adopted a more critical position, especially in the following three respects:

a) They are sceptical regarding the introduction of conditions guaranteeing the quality of the teaching at Work Centres and question whether training is even really provided in Apprenticeship Contracts. This mistrust is reinforced by the fact that the trades unions do not take part in the follow-up and assessment of training in enterprises.

b) They feel there is a risk that enterprises might give priority to reducing the costs associated with these "alternating training" strategies, to the detriment of the training function, which they may partly (or completely) overlook. This risk is higher, according to the trades unions, with the "deregulation" of the conditions of recruitment resulting from the new labour law (which cover Apprenticeship Contracts).

c) If these misgivings turn out to be founded, there is a risk that those presently employed will be substituted by trainees in alternance programmes, resulting in the least privileged groups of workers on the labour market being pushed into an even more unfavourable position than previously.

The Apprenticeship Contract has led to strong opposition by the trade unions, and was one of the motives of a general strike that took place in January, 1994.

SWITZERLAND

Apprenticeship – The Features of the Swiss Dual System

by

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1. The Swiss vocational training system

Vocational training constitutes an important stage in the lives of over 60 per cent of young men and women from about the age of 16, that is to say, of those who have had nine years of primary and lower secondary education.

The Confederation, cantons and professional organisations have, over more than a century, developed a vocational training system whose efficiency is recognised by most of the population and by business and industry in general. The Swiss vocational training system appears in the eyes of some as static, but it has evolved considerably over the years and is continually adjusting to changes in the social and economic environment.

Two recent proposals, one to establish specialised higher schools (HES – *Hautes Écoles Spécialisées*) and the other to introduce *maturités professionnelles* (final certificate of upper secondary education giving access to higher education), have proved popular and received broad support from all the parties concerned. The common aim of these two projected reforms is to make vocational training more attractive. They are going ahead at remarkable speed by Swiss standards.

Other measures are being contemplated or being tested in pilot schemes:

- classroom instruction in the form of "block" courses;
- a thorough review of the split between subject matters taught in the workplace and in vocational schools;
- improving the supply of further occupational training;
- reducing the initial vocational training period to three years;
- providing the ablest students with a year of full-time study at an advanced vocational school;
- providing the less able young people with a year of further workplace training.

A statistical survey carried out in Spring 1993 revealed that 2 million people, or almost 40 per cent of the Swiss resident adult population, follow some form of further training. Fifty per cent of them take these courses for purely professional reasons.

2. Linkages between education and employment: what will be the role of apprenticeship and "alternance"?

Practical vocational training in Switzerland is provided at the workplace, in company-run training centres and in trade schools. This practical training is supplemented by theoretical training, the extent of which depends on how much classroom instruction is needed to ensure the individual's professional and social fulfilment.

Practical training is provided in the very places where goods are produced, where information is processed or where services are supplied. In other words, it is on-the-job training. The trainee learns by assisting in the performance of real tasks. The instructor trains the person in the craft that he himself exercises; his skills as a professional craftsman are considered as being more important than his function as instructor. The method of instruction most commonly used for the workplace to provide training is the performance of new tasks. Entreprise-based training, by placing the trainee in a working environment, enables him to learn skills that cannot be taught at school.

The critics of alternance obviously do not share this view. In discussions on vocational training, the notions of learning and working are constantly presented as antithetical, despite the fact that experience has shown that they are indissociable. The development and improvement of living standards, and the series of recessions over the past thirty years have, however, helped to rob traditional values of much of their substance. People today are motivated more by such ideas as prestige and social status.

Vocational training has been particularly affected in this respect, mainly because the system has not always moved with the times and kept pace with the needs of both employers and society.

Calls for better quality and more intensive training tend to coincide with periods of crisis. Measures in this field are looked upon as magic potions for curing the various other ills of society. When the labour market starts to shrink, the remedy is seen in the form of a government offensive in favour of occupational training. The vocational training system is expected to confer higher social standing, ensure career success, provide a pool of skilled manpower in times of shortage and offer practical solutions to labour market difficulties.

The education system in general, and vocational training in particular, are expected to provide the answers to such complex problems as these:

- producing highly trained specialists while at the same time maintaining versatility and individual mobility;
- supplying skilled workers capable of complex abstract reasoning while at the same time preserving traditional know-how;

- providing specialised training in new technologies, while at the same time enlarging the general culture of every individual.

What we are seeing, especially in times of technological progress, economic transformation, expansion and recession, is a growing polarisation of contradictory and seemingly incompatible needs.

There is a temptation in such unstable circumstances to change direction completely, whereas the only realistic and, from the individual's standpoint, reasonable course of action is to strengthen the links and eradicate the malfunctions between the school and the workplace. The reasons for youth unemployment in times of economic difficulty are not to be sought solely in the training system.

Furthermore, in a period of major economic restructuring involving the disappearance of certain types of occupation, a dual vocational training system is the only one capable of reacting with sufficient speed, since it is the labour market that regulates access to a particular occupation.

A good illustration of this is that, in times of structural change and industrial mutation, the redeployment of the workers concerned always follows a pattern of alternating training and the establishment of a new skills profile (Figure 1).

3. The mediation between general and vocational education and training

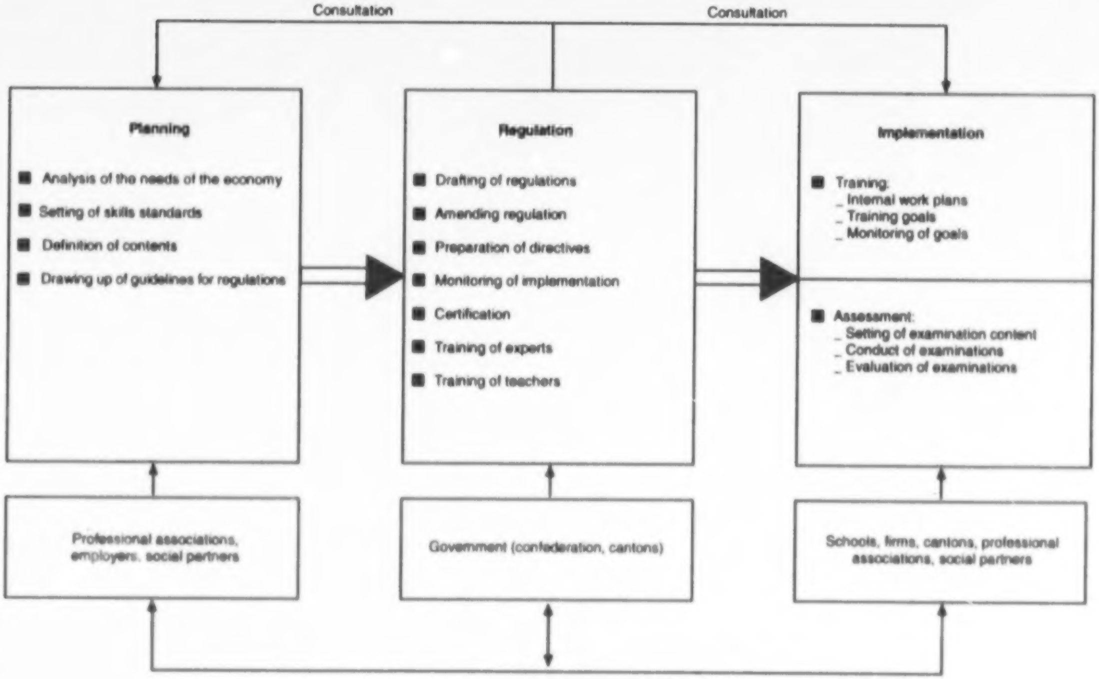
In Switzerland, secondary II education has long resembled an archipelago, with the largest island, 63 per cent, representing vocational training, a smaller one, 18.1 per cent, representing general education (*gymnasiums*, etc.), plus a scattering of tiny islands not always very clearly definable as secondary II (See *OECD International Education Indicators*, Paris, 1992).

In recent years, pupil interest has begun to shift to general education and away from vocational training. This has meant that these two streams can no longer operate separately as they have done in the past and as was still the case at the time of the OECD review of Switzerland's education system in 1991. For as long as the labour market kept functioning and renewing itself automatically, the proportions of students in general and vocational education stayed the same. Vocational and university students could, as a rule, find jobs quickly and progress professionally without having to amass diplomas.

A number of factors have contributed to an identity crisis in the secondary II streams:

- rising unemployment;
- divergent values;
- the democratisation of studies;
- better educated parents;
- the diversity of school populations;
- the growing demand for general skills at every job level and hence in every field of training;
- the concepts of mobility and flexibility within educational programmes.

Figure 1. **System for drawing up training and examination regulations**


Consultation
Consultation
Planning
Analysis of the needs of the economy
Setting of skills standards
Definition of contents
Drawing up of guidelines for regulations
Regulation
Drafting of regulations
Amending regulation
Preparation of directives
Monitoring of implementation
Certification
Training of experts
Training of teachers
Implementation
Training:
_ Internal work plans
_ Training goals
_ Monitoring of goals
Assessment:
_ Setting of examination content
_ Conduct of examinations
_ Evaluation of examinations
Professional associations, employers, social partners
Government (confederation, cantons)
Schools, firms, cantons, professional associations, social partners

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The needs of the young, society and the economy are tending to overlap and coalesce. As a consequence, the boundaries that used to separate general education based on the acquisition of a broad culture from vocational training in a trade school or the dual system based on the acquisition of varyingly specialised operative skills according to occupation have become less distinct.

In Switzerland, particularly in urban areas, the practical result has been for many young people to spend a longer period in secondary II. The choice of a vocational programme is often delayed and, instead, general education is continued for as long as possible, although not necessarily to diploma level. A not insignificant factor in this respect is the higher prestige attached to the status of a student compared with that of an apprentice. There is a certain amount of switching from one general programme option to another before choosing a vocational programme which is viewed as a last resort. Mobility of this kind cannot be regarded as beneficial but rather as a costly equivalent of academic underachievement. At best, this prolonging of schooling before entering an apprenticeship reflects the current approach of employers to taking on apprentices: students who have come through the more demanding secondary I streams stand a better chance of securing an apprenticeship in the technical or services sectors than those who have followed the traditional paths leading in theory to an apprenticeship. These are palmy days for general education! Structural unemployment in Switzerland may well be with us for some time yet. This does not encourage young people to make haste to finish their education. Secondary II has therefore assumed a double function: as a source of post-compulsory education and as a holding-station for those seeking a career choice in line with their aspirations and thereafter a place in working life with a reasonable degree of job security. Nor does the idea of having to change careers at some later stage make for early choices.

What is more, the same personal and social skills are now required for both post-secondary studies and obtaining a job at whatever level. The new guidelines for programmes of study at Swiss *gymnasiums* distinguish between the general abilities needed by all 15-20 year-olds and those specific to *gymnasium* studies. It would be possible to carry out the same exercise for all the secondary II general and vocational streams. To quote just a few of the similarities in this respect:

- the ability to study;
- the ability to work alone and in a team;
- the ability to understand and use foreign languages;
- creativeness and a sense of responsibility;
- a solid general grounding and a positive attitude to further training.

The differences lie in the degree to which these abilities are developed and deepened, in their field of application and in the personal and social prospects characterising their use.

This is a situation which applies in most OECD countries. But in Switzerland, innovations in general education and vocational training are still considered separately. Critical voices are beginning to be heard, however, and a dialogue has begun at the political level. Some projects are under way also, but the habit of working together and awareness of how urgent it is to do so are slow in coming. Perhaps the spectre of structural unemployment and the excessive number of students in some university departments will act as a spur to increased co-operation.

A comprehensive approach to secondary II would enable the different general education and vocational streams to take account of new training requirements, especially as regards key skills and general culture, while at the same time retaining and rediscovering their identity or, even, in some cases, their value.

The demand for more general culture in vocational training does not mean moving away from the dual system. On the contrary, it can and should be satisfied within the system, whether the aim is to:

- carry on to post-secondary studies (HES, brevet, maîtrise);
- acquire the knowledge and skills needed for adapting to developments at all levels in the world of work;
- be able to take part in public and social life, or intelligently organise one's leisure time or, if the situation arises, periods of enforced idleness.

The debate on a general cultural grounding thus concerns not only the new streams leading to *maturités professionnelles* but all forms of training, of whatever duration. It calls for an overall review and redefinition of structures and content. This is the approach that is being followed by the higher vocational schools (EPS) which dispense general education to young apprentices and – since the start of the 1993/94 school year – to *maturité professionnelle* students in addition to their basic training (apprenticeship).

Schools are endeavouring to harmonise their curricula so that it will be possible at all times to switch streams: from short-cycle training to apprenticeship, from apprenticeship to *maturité professionnelle* – in other words, to a higher level whenever a student is so inclined.

The introduction of the *maturité professionnelle* is linked to the creation of the specialised higher schools (HES). The diversity of post-secondary studies is now matched by the diversity of secondary-level qualifications.

The approach that Switzerland has decided to adopt, therefore, is to improve the linkage between the two types of education.

In other words, the existence of two paths of education of equal social standing should eventually prevent any downgrading of the dual system and alternating training. Seen in this perspective, alternating training is still a highway to the future.

4. Pedagogical objectives and organisation of "alternance"

The choice of alternating training is the result of factors that often have little in common. Some choose it because they know what occupation and what career path they wish to follow. Others switch to vocational education after failing to achieve satisfactory results at the *gymnasium*. Apprenticeship, it should be noted, is the only alternative for students who have consistently underachieved during compulsory and lower secondary education.

The motivations of apprentices are thus extremely varied, as is the intellectual ability of students in vocational schools.

Traditionally, vocational schools implement the training requirements set out in the apprenticeship regulations. With suitable instruction, the majority of learners reach the required standard and complete their basic programme of training.

The changes in job contents and the changing needs of society mean that the goals of training have constantly had to be expanded. What has become apparent however is that, while the level of training in the various vocational sectors has indeed risen, the standard of general education has not greatly improved. Admittedly, where apprenticeship is concerned, firms do not attach much importance to general education.

The present vocational training situation is characterised by:

- a satisfactory match between the educational goals of the various vocational training sections and the needs of business and industry;
- a yawning gap between the goals of the general education sections and what a person needs in order to embark on a career or a stream of higher education.

In recent years, there have been four important innovations in vocational training in addition to the *maturité professionnelle* already mentioned:

- better training for apprenticeship masters;
- a revision of the goals of the general education sections;
- the introduction of new teaching structures (block courses);
- research into pedagogical "pairing", aimed at strengthening the links between teaching in the vocational and the general education streams.

The aims that these four innovations are intended to achieve are:

- that all apprenticeship masters should be adequately trained so as to ensure that firms provide high quality workplace instruction;
- that general education streams should more effectively meet the present and future needs of apprentices and provide them with a sufficient grounding to enable them to cope with various phases of their working careers;
- to organise education and teaching methods in vocational schools in a different way so as to increase student motivation and give greater coherence to workplace and in-school training. In this respect, block courses are an approach that seems to be yielding results. Students are more motivated and teachers can use pedagogical techniques adapted to the situation. Firms are, for their part, better able to involve the trainee in the work process;
- to introduce a form of multidisciplinary education. General and technical stream teachers jointly draw up a teaching programme and learning targets for each class. This approach has enabled certain consistent underachievers to rediscover a taste for learning and develop their creativeness.

These various innovations form part of an overall review of the educational structure of alternance. They mainly concern the role of the school; other initiatives will be needed to improve the quality of training in the workplace.

5. The institutional framework and the role of different actors: new patterns of "social regulation"?

Institutional framework

The institutional framework for apprenticeship training is set out in the Vocational Training Act (LFPR – *Loi sur la formation professionnelle*). The Federal Department for the Public Economy is responsible for drawing up apprenticeship training regulations on the basis of proposals from the sectors of business and industry concerned.

Apprenticeship training regulations are in principle drawn up only for occupations which "involve the learning of a wide range of practical and theoretical skills that cannot be acquired through a simple explanation of what has to be done" (LFPR, Article 13). The Federal Department for the Public Economy also has the responsibility both of seeing to it that these regulations are kept up-to-date and of ensuring co-ordination between related occupations (LFPR, Article 12).

The regulations set out the mandatory conditions to be met by the employer and the apprenticeship master. They define both the workplace training programme that the apprenticeship master has to follow and the framework curriculum for the vocational school.

Under Swiss private law, apprenticeship is considered as a special kind of individual contract of employment entered into by the three parties concerned, namely the cantonal authority, the apprenticeship master and the trainee and his/her legal representative. Any apprenticeship contract drawn up between an employer and a trainee has to be formally approved by the cantonal authority before the apprenticeship begins (LFPR, Article 20).

Role of the different actors

Business and industry, via their professional associations, play a decisive role in determining how the apprenticeship system should operate; they are the source of any new training regulations and amendments to existing ones. They must demonstrate to the federal authorities that any proposed new regulations correspond to genuine needs in terms of occupational skills.

Their responsibility, exercised through those designated in the contracts as the "apprenticeship master", covers a number of very important aspects directly concerning the conduct of training under the dual system – recruitment of the apprentice, quality of supervision in the workplace, help in understanding the theoretical instruction provided by the vocational school.

Business and industry, through the experts appointed by the cantons to assist in organising and holding the end-of-apprenticeship examinations, exert a powerful influence on the standards used for the certification of candidates.

Unlike business and industry, the vocational schools do not play a major part in the conduct of the apprenticeship scheme. They are not signatories to the apprenticeship contract and for many years their role was confined simply to providing a theoretical supplement to workplace training. Since 1980, however, they have been assigned an educational task in their own right (LFPR, Article 27).

By virtue of its institutional framework, the dual system is based on a division of tasks between the firm and the school rather than on a partnership between the two in a joint programme of training. This fairly strict demarcation is a potential source of friction between the two places of training; each one tries to claim the credit for any successes and to blame the other for any failures.

The assigning of a more precise role to the school within the apprenticeship system has been considerably helped by the introduction of the *maturité professionnelle*. The shifting of the balance in favour of general education (see Section 3 above) has not been to the liking of certain apprenticeship masters, who see any increase in classroom instruction as being inevitably at the expense of workplace training.

New patterns of social regulation

It is reasonable to assume that, during a period of economic expansion, the problems of recruiting, replacing and training staff are a constant concern of corporate personnel management strategies. On the other hand, with the economic crisis it has become clear that cost-cutting, especially in terms of wage costs, now outweighs any other consideration as regards personnel management. This has undoubtedly led to a weakening of industry's role in putting into effect a training approach based on the dual system (see Section 2).

While the reduction in the number of apprenticeship places is clearly one of the outcomes of the cyclical downturn in business and industry, by contrast the doubts expressed as to the dual system's value as a system of training are the sign of a weakness of a more structural character. Underlying the rising generation's gradually increasing disaffection with regard to apprenticeship training are misgivings about how successful have really been the attempts to link educational goals and practical work skills (see Section 4).

The implications of this for the future of the dual training system are serious enough for it to be impossible not to be worried by the gradual drift of a growing proportion of adolescents towards academic studies. It is interesting that the government has expressed more lively concern than industry about this trend – in part because of the budget deficits which any sharp increase in public education spending would entail.

The reaction of business and industry came later and by sector. There have been occasional efforts to promote apprenticeship training in certain branches of activity, but the concern has been more to ensure worker replacement than to preserve a system of training.

This lack of a comprehensive approach to the education system as a whole is due to the fragmentation of operating structures and the dispersion of centres of decision. However, a number of initiatives that have been prompted by the desire to make the dual system more attractive are worth mentioning: a rearrangement of alternating training through the introduction of "block weeks" in school; the creation of core curricula for related occupations; and the introduction of streams based on a stage-by-stage process of learning.

It must nevertheless be admitted that awareness of the seriousness of the situation is not sufficiently widespread to generate a sweeping movement for reform. Future discussions in the Federal Parliament and the Federal Commission for Vocational Training will quite certainly help to initiate a wider debate on the reforms that are needed in the Swiss education system. Even so, changes in the institutional framework must first pass through the law-making process and it will be some time before their effects are felt.

The apprenticeship-based training system is therefore likely for a time to experience a period of decline. The shift towards academic studies will come to an end when the dead end to which it leads become apparent. These malfunctionings will have a very direct effect on many of the parties concerned: the government (growing budget deficits), business and industry (a progressive loss of skills at the operational level) and those leaving the education system (frustration because tasks do not match their qualifications).

The social regulation that will follow will necessarily involve an overhaul of the education system, which will need to include a repositioning and redesigning of the apprenticeship training stream. Alternating training is likely to operate along different lines which will entail considerable changes in the workplace in order to transform it into a genuine place of training.

THE NETHERLANDS

The Links between School and Firm-based Vocational and Technical Education Highways to the Labour Market and Pathways to Higher Education

by

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1. VOTEC in and alongside the education system

In the Netherlands, upper secondary education includes pre-university education programmes, which prepare students for university, and senior secondary general education programmes, which constitute a preparation for non-university higher vocational education. Upper secondary education also includes the apprenticeship system and senior secondary vocational education (MBO).

Until recently, priority was focused on general education. In the last few years there has been a growing emphasis on preparation for work in Dutch education. Programmes designed to give young people a taste of different jobs and to guide their study and career choices made a cautious entry into general education; participation in vocational courses increased, and many were revised with the aim of gearing them more closely to occupational practice.

The division between general and vocational provision has remained, with general secondary education increasingly acquiring a preparatory role *vis-à-vis* vocational programmes. This shift is seen in a new definition of the first and second stages of secondary education. The introduction of a common curricular core for all students aged 12-15 will confirm the new first stage, which will formally include no vocational education. In the second stage an institutional division is likely to persist between general and vocational education. The distinction between preparatory and final provision will increasingly coincide with that between general and vocational education. Even at the highest level, where university is still seen to have higher status than higher vocational education, there is a gradual shift towards equality. The vocational element in university programmes is being strengthened and the vocational sector is increasingly seen as delivering programmes and qualifications equal in value to those of universities.

Bridging the gap between general and vocational education could well prove to be a central issue in the coming years. The debate is likely to focus not so much on institutional divisions as on the definition of learning targets for the various courses and curriculum design. On the vocational side, this bridging process can be seen in the moves to reshape the pattern of vocational programmes (with combinations of general and work-related elements), and also in moves to integrate or broaden traditional job-related programmes. As sectoral studies reveal, these shifts in vocational education run parallel to shifts in industry and occupational structures. The studies also show that in some cases the initiative for change came from the colleges.

In the last 10-15 years, the system has been at risk of fragmentation: more recently, however, moves have been made to establish a stronger and more coherent structure of vocational provision at upper secondary level, by creating a differentiated system of training pathways. This process is at the core of both recent developments in Dutch vocational education and government policy.

2. Towards the integration of school- and firm-based VOTEC systems

Initial vocational training is subdivided into two areas which have developed more or less independently: the apprenticeship system and the system of secondary vocational education (MBO). The MBO programmes combine full-time education with short periods of practical training lasting from a few weeks to one year. The apprenticeship system is a dual system. Practical training is combined with theoretical education lasting one or two days a week. Vocational training in the Netherlands is undergoing dramatic change, leading to a less rigid system of vocational education.

- In order to increase flexibility and co-ordination between MBO and the apprenticeship system the colleges have undergone a merger process of institutional integration. In the years ahead this process will continue. Colleges will be integrated in interdisciplinary and multi-sectoral training institutions.
- Formerly, all apprenticeship was arranged in a uniform way. In recent years, some branches have adopted specific arrangements.
- In 1992 a "hybrid" form of MBO was introduced for some occupations. Students take the first two years of an MBO programme in a college and the following two years in the apprenticeship system.

3. A national qualification structure as an instrument of integration

Integration of the school- and firm-based pathways of vocational education and training is reinforced by the national and sectoral qualification structure that is now being elaborated. This qualification structure is a strong instrument regulating the interaction between the labour market and the education system. It also helps ensure the expansion of VOTEC programmes at the intermediate skill level.

The reforms under way attempt to reduce the gap between MBO and the apprenticeship system and develop a global structure. To this end the qualifications offered by MBO and the apprenticeship system should be integrated into a single national qualification structure. The primary aim of developing a national qualification system is the harmonisation of various learning paths in the apprenticeship system and in MBO. A national qualification system can be described as a single system of training programmes with common attainment targets, examinations and diplomas. The diversity in attainment targets outlined until now have made clear the necessity for central control of the procedure of defining these concepts in order to produce a common framework. Two principles are important in this regard: the level of training and programme content. By definition, final qualifications in secondary vocational education have a mulitiple character.

4. Broad qualifications for skilled workers and intermediate level workers

Changes in the industrial environment and the widespread influence of information technology stress the need to develop key qualifications that can be used in a wide range of jobs. The qualifications structure must be based on broad qualifications for skilled workers and at the intermediate level in all pathways of vocational training.

The broadening of vocational education leads to both horizontal and vertical extension in the provision of education.

The horizontal broadening process has two aspects: dismantling sectoral divisions in vocational education, and transcending the distinctions between general and vocational education. The dismantling of sectoral divisions is a laborious process: the growing overlap between different occupational categories and the blurring of sectoral boundaries by economic, technological and organisational change pull in one direction; the interest (including the economic interest) that sectors have in maintaining or developing distinct training provision pulls in the other. Greater integration means, above all, that learning targets and training will come to resemble one another more closely in certain respects, perhaps to the point of including common core programmes. In this connection it is encouraging that colleges of vocational education at upper secondary level, which have traditionally been narrowly specialised, have begun in the last few years to offer programmes ranging over several sectors.

The division between general and vocational education is not seen as an institutional issue: rather, the vocational side faces the challenge of achieving recognition as a complete and valid form of education. To meet this challenge, it will be essential for colleges to broaden their provision in the growing demands for understanding, flexibility, the ability to learn, communications and organisational skills, and foreign language knowledge. These are all skills being required of employees at the intermediate level. In this sense, the distinction between general and vocational knowledge and skills is in fact outdated, but while this view is increasingly taking hold in the worlds of employment and education (and among students and their parents) its translation into educational curricula will be no easy matter.

Led by top industrialists Wagner and Rauwenhoff, who each chaired education committees, industry has taken a greater interest in the content of vocational education. In the 1980s, educators, employers and unionists gave extensive consideration to the question of the purpose of upper secondary vocational programmes, both college-based or in the apprenticeship system. In the case of college-based programmes, sectoral consultative councils were set up for this purpose; in the apprenticeship system the relevant national bodies already existed. Colleges were pressured into focusing on occupational practice in a single sector. A contrary movement has also been visible more recently, with the government working to create multi-sector colleges of vocational education.

The results so far of the reorganisation of upper secondary vocational education illustrate this tension: both single-sector and multi-sector colleges have been formed. Even so, individual sectors are still to be found in separate departments within the multi-sector colleges. Sectoral consultations have led to attainment targets which will be implemented mainly at the level of the individual sectors; it will be left to the colleges to take a supra-sectoral view in designing new programmes. Most recently, government policy aims at a vertical and horizontal extension through the creation of colleges providing both vocational and adult education, along the lines of institutions of this type in the United Kingdom and the United States.

5. From general to vocational education: diversity of entry levels

A characteristic of the national structure of qualifications is the introduction of levels of qualification according to the function or tasks that relate to the actual needs of industry: assistant level, level of starting vocationals, level of independent vocationals, level of middle management. Levels of the national structure of qualifications are based on the criteria of responsibility, complexity and transfer. The different levels correspond to different levels of entry into the vocational training system.

It is evident that despite (or perhaps thanks to) the government's drive to create multi-sectoral colleges, some sectors have a tendency to concentrate all forms of vocational education for that given sector in one type of institution. Sectors which have organised themselves in this way, such as printing and agriculture, tend to look beyond sectoral boundaries: developments in other sectors are monitored and, where necessary, incorporated into the curriculum.

Sectoral training systems of this kind comprise a very ramified programme, including both initial and further provision with proper co-ordination and efficient transitions. The initial stage is seen as broad and pre-vocational, while the further education stage is specialised and job-oriented. This coherence across initial and further provision makes for a smoother transition from education to employment, while further training is seen as a way of responding to the training aspirations and needs of divergent groups of adult clients, such as people seeking to return to employment or change career direction, older workers, immigrants, the unemployed, etc.

Presently, the government strongly encourages the fusion of colleges providing full-time programmes with those delivering the school-based element of apprenticeship programmes. Bringing these different learning routes under the same roof could stimulate innovation on both sides. These fusions also involve institutions for adult education, which leads to both horizontal and vertical extension of training provision.

6. Employer and employee participation in VOTEC: challenges and threats

National tripartite bodies will play an important role in the evolution foreseen in the vocational training system. The national bodies comprise representatives of the social partners from the different branches of industry and representatives of the education system. They constitute an important link between industry, the government and education institutions. These bodies have been given the main responsibility for the implementation of a single qualification structure for MBO and the apprenticeship system.

Policy efforts in vocational education in the last ten years have searched to achieve an interface between vocational training and the labour market. In 1985, a government memorandum announced the creation of national industrial consultative bodies for education and industry. These consultative bodies were to take an inventory of the skill needs of industry. This inventory is used as an outline to formulate the training goals of the MBO programme. The increased involvement of social partners has been an important innovative element in MBO. This type of education was traditionally oriented towards general and theoretical vocational training and paid less attention to practical qualifications.

In the apprenticeship system, the negotiation of work-study contracts between companies and apprentices is achieved with the help of national bodies. These are funded by the national government but governed by boards set up by the social partners and the education world. They submit curricula and examination syllabuses for ministerial approval, organise examinations and award the certificates.

Since 1993, the national bodies give their common opinion on attainment targets for the apprenticeship system and for the MBO programme. In the near future, the vocational qualifications of these two systems will be part of one national qualification structure.

The apprenticeship system has enjoyed increasing attention from the public authorities since the 1980s, with the government taking initiatives to reinforce it. In the 1980s, government and industry made an agreement. Employers promised more practical learning opportunities for apprentices and in exchange were given a say in the content of education (MBO). It was thought that the dual character of this training path would be useful in combatting the high rate of youth unemployment. At the same time it was hoped that an increase in the number of practical training places would fulfil the (future) needs of industry for skilled workers. As a result, between 1982 and 1989 the number of apprentices in the dual system doubled. Nowadays due to the economic recession participation in the apprenticeship system has tended to diminish. New incentives are necessary. The government launched a plan during summer, 1993 aimed at increasing the number of apprenticeship positions by 20 000. Implementation of the plan, however, requires efforts from both industry and trade.

To increase the effectiveness of the apprenticeship system as a whole and upper secondary vocational education (MBO), it is necessary to regulate the balance between both routes. Economic downturns and upward movements in labour market considerably influence the level of participation in the apprenticeship system. In times of recession there is a shortage of training places in industry, trade and services. A major reduction in the capacity of the apprenticeship system has negative effects and periodically, measures to revitalise the apprenticeship system are necessary at extra cost and effort. There is a risk of weakening existing infrastructures and expertise. Presently the government and social partners face the challenge of reaching agreement on a system that guarantees equilibrium between both routes in vocational education. One of the ideas now being tested is the development of an anti-cyclical fund from which tax reductions can be given to firms that take on apprentices for training, although they do not need new personnel in the short term.

7. A minimum starting qualification for the majority of school leavers

It is essential that more students aquire a basic qualification that is useful in the labour market. This qualification should not simply be limited to the knowledge and skills required to find a job; it should also permit them to be well-equipped to meet technological changes and prepared to continue their training, once they are in a job. A policy in this direction is needed because many students leave school without completing their programmes and thus lack any official qualification. These students form a vulnerable group on the labour market, doing unskilled work and often shifting jobs; they run the risk of being unemployed as they grow older. Schools are being encouraged to reduce drop-out rates with help from the local community and employers.

A strong emphasis is placed on preventing students from dropping out and raising the standards of school leavers. The Ministry of Education and Science has introduced the concept of "a qualification norm" as the minimum level of qualifications each school leaver should reach. The qualification norm concerns young people as well as adults. It is necessary for entry on the Dutch labour market but it also prepares citizens for participation in social and cultural life.

For pragmatic reasons, the apprenticeship level has been taken as the "*startkwalificatie*" level. The short programmes in senior vocational secondary education and the higher forms of general secondary education are considered to be equivalent at this "startkwalificatie" level. However, a diploma from junior secondary vocational education and lower general secondary education are not considered as meeting this level. Students with such diplomas are urged by legislative measures to continue their education to the "*startkwalificatie*" level.

In a discussion paper entitled "A Lifetime of Learning", the Minister of Education and Science outlined several pathways to reach the goal of a "starting qualification" for everybody. The relevant parties, educational institutions and social partners, must first combine efforts to reach a maximum number of "starting qualifications". These will concern the conditions of entry into apprenticeship, the certificate obtained as well as the training for low-educated employees. Young people under 18 years of age should be prevented from leaving the apprenticeship programme and taking up full-time work. To reach the qualification standard, the paper suggests that young people without a "starting qualification" not be offered a work contract unless both parties undertake to reach this *startkwalificatie* level. Persons over 18 years of age are responsible for themselves. Low-skilled workers have no obligation to acquire a qualification, but they must have the possibility to reach the *starting qualification* level. The low-skilled unemployed must be offered training. Existing obligations to take training should be enforced. Trade and industry should reinforce their training efforts for low-educated employees. Regulations concerning training activities and training leave should be incorporated into collective labour agreements. The role of government will be limited to providing information, investigating, and stimulating training activities. An instrument for assessment of prior learning will be developed and implemented. It will permit recognition and certification of acquired but not officially recognised qualifications. This improves the labour market position of those persons assessed and the transparency of labour.

Those who enter the labour market without the necessary qualifications receive special attention. The social partners have reached agreement on the need to share responsibility for the acquisition of minimum qualifications for all those entering the labour market. The minimum level will be that of the first two years of upper secondary vocational education.

8. Contextual and integrated learning: a new concept of vocational education?

An advisory committee of the Ministry of Education and Science has introduced a new concept for work placements in MBO education and in apprenticeship. The manner of integrating "occupational practice" is harmonized between the two systems. In this way, they are drawing closer together. Dutch education, even vocational, is highly school-based. On-the-job learning plays a role, but not as important as it should, according to modern insights into effective vocational education.

Dualisation was an important subject in recent negotiations between the government and employers. The government advanced the idea of sharing responsibility for vocational education, enterprises taking charge of the job practice training. But the idea appeared to be a barrier to reaching an agreement on the reform of vocational education. The enterprises feared that government wanted to save money at their expense by making them financially responsible for vocational education. However, for government, giving business partial responsibility for the learning process could lead to improvements in the quality and effectiveness of the same learning process in vocational schools. The negotiations ended with an agreement in which government guaranteed to maintain responsibility for the budget for vocational education in the coming years. An inventory was made within branches of industry and the public sector, to find out who was interested in developing dual models of learning. All parties were surprised to find out that over half of the 130 different branches in the Dutch economy would like to experiment with dual learning.

The formulation of hypotheses regarding the effects of dualisation is made difficult by the fact that the term is used in different ways. There are two basic meanings: on the one hand, increased responsibility (including financial responsibility) for industry; on the other hand, an increased practical component, notably in full-time programmes, to be achieved by replacing work placements with periods of employment under combined work-and-training contracts and a concluding period of dual training. The recent report of an advisory committee leans towards the second option. The committee recommends a set of equal demands on the practical component of vocational education in upper secondary vocational education and in the apprenticeship system. A contract between the student, school and enterprise is essential: it sets targets for the practical (occupational) component, school learning activities, tutorials and exams. These provisions are essential to reinforce the practical component.

9. The problem of "de luxe pathways" and progression to the higher level

In the Netherlands, MBO (upper secondary vocational education) is of a growing importance as a progression route towards higher vocational education (HBO). In the early 1980s, only 10 per cent of the students coming out of MBO moved into HBO compared with 35 per cent today; this is expected to increase to 50 per cent or more in the next decade. Because they take a longer route through upper secondary education, students from MBO tend to fare better than fellow students. Longitudinal research has shown that the vocational progression route is at the same time a means of social advancement for young people and parents who are not yet affected by the drift towards general education.

When MBO and HBO colleges are able to design pathways that allow students to acquire the HBO diploma within six years instead of the present seven, the position of MBO as compared to HAVO will be considerably improved. This trend is welcomed from the viewpoint of public funds efficiency and equality in the status of the general and vocational pathways. Much attention is therefore given to the selection and orientation process after the first (comprehensive) phase of secondary education. At that point in their educational career, students have to choose the general or the vocational track. These new pathways will prevent the "de luxe pathways" that go from upper general secondary school to higher education via the upper secondary vocational system. This route is now taken very often by young people who have not succeeded in upper general secondary school; to prepare for higher vocational education they spend a few years in MBO. This is very inefficient both for individuals as well as society.

The question of "adapted pathways" and the status of vocational as compared to general education is part of a wider debate on (de)massification of (general) higher education and on limiting the right to learn, for example by means of vouchers. The major challenge for the vocational institutes and colleges is to design a royal route to the labour market and to higher vocational education for the majority of the students coming from the first stage of secondary education.

10. Organised pathways of vocational education as a major route

If, as has been argued, there is still room for discussion of broadening, both horizontally between sectors and vertically between hierarchically distinguished components of the system, then the theme of dualisation will again be a subject of debate. The dual system runs the risk of evolving towards flexibility but also towards specialisation, implying that training is narrow and excessively focused on occupational requirements. Recent developments emphasizing the notion of dual teaching will show whether this type of teaching will be expanded or whether the movement towards dualisation will at some point level off. Future policies will need to overcome these constraints in an intelligent, flexible and systemic approach. Decentralised arrangements and a national assessment of quality will be central to this policy mix.

To increase the attractiveness of vocational education, different actions are being taken:

- the pathway between pre-vocational education and senior vocational education will be improved;
- after the first stage of secondary education students will take a test to orient them in their subsequent studies;
- although senior vocational education (MBO) is mainly seen as preparation for skilled jobs on the labour market, it also qualifies for higher vocational education;
- MBO and HBO schools will be given incentives to increase the effectiveness of learning pathways of MBO and HBO;
- MBO and HBO colleges are developing longitudinal programmes for courses they have in common.

Will the horizontally and vertically organised pathways of vocational education in the future be the major route in tertiary education? Such a development would be beneficial to the Dutch economy, to its competitiveness and employment.

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